

Degree in Medicine and Surgery

Teaching: Clinical and Systematic Medical and Surgical Methodology 4 ECTS

Internal Medicine: 2 ECTS MED/09

Professors:

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General Surgery: 2 ECTS MED/18

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LEARNING OUTCOMES OF THE TEACHING

Internal Medicine

To know:

- the methodology of medical history taking
- how to perform a physical examination, and to distinguish normal findings from the main pathological findings
- how to recognize the main objective findings in the most frequent medical syndromes
- the normal ranges of the common laboratory tests used in clinical practice
- the main instrumental exams that can be used, and when their prescription is appropriate
- the basics of clinical reasoning and their application in approaching a patient

To be able:

To collect and summarize clinical history

To perform and describe physical examination procedures

- to measure arterial pressure, perform venipuncture, register and interpret an electrocardiogram

General Surgery

To teach the student the method to perform patient's history and physical examination.

Knowledge of essential medical terminology.

Symptoms, approach to symptoms, signs and syndromes. Diagnostic decisions.

PREREQUISITES

Knowledge of anatomy, biochemistry, general physiology, and pathology.

Previous knowledge and competence in the following subjects: Human Anatomy1; Human Anatomy2; Physiology and Pathophysiology; Biology and Genetics; Biochemistry and Molecular Biology.

COURSE CONTENTS SUMMARY

Internal Medicine

For Medicine and Surgery undergraduate students, the Semeiotics and Clinical Methodology course represents the first moment of practical application of the physiological and physio-pathological concepts acquired in the first two years of undergraduate studies. The course will deal with the methodology of the approach to patients, whether in hospital or outpatients, with either medical or surgical health problems. Attention will focus on the physio-pathological interpretation of the main signs and symptoms of disease and the main alterations found on physical examination. Teachers will illustrate the classical Semeiotics concepts (medical history, physical examination, approach to signs and symptoms) bridging the physio-pathological background with the methodology of Clinical Medicine, showing students not only the approach to signs, symptoms or diseases, but to patients as persons with disease. Students will be able to learn how to take a medical history, how to perform a physical examination, how to approach the main signs and symptoms of disease – either of medical or surgical interest - and how the diagnostic reasoning should be performed, and how and when prescribe the main laboratory tests and instrumental examinations. The main alterations (physical, laboratory, and instrumental) associated with the most frequent diseases or syndromes met in clinical practice, will be described, in order to enable the students' recognition of the main pathological scenarios.

General Surgery

History: Interviewing and health history. Chief complains and present illness. Family, past and psychosocial history, current health status, review of systems with particular regard to: weakness, vertigo, fainting, syncope, seizures, itching, thirst, diuresis and frequency of urination, appetite, bowel habits, sexual interest and activity, fever and changes in sweating, dyspnea, palpitations, cyanosis, orthopnea, edema, cough. General Physical Examination: Approach to the patient, facies, height, body weight, habitus, nutritional status, somatic and sexual development, posture or decubitus, sensory and mental status. Skin and related structures. Musculoskeletal system. Lymph nodes. Head and neck: eye, ear, nose, mouth, pharynx. Semeiotics of the thyroid gland. Physical Examination of the Thorax and Lungs : –

Inspection: shape of the chest and the way in which it moves including deformities or asymmetry, abnormal retractions, impairment in respiratory movements or unilateral delay in that movement, abnormalities in rate and rhythm of breathing, collateral circulation, movements of the abdomen during breathing. – Palpation: chest expansion, assessment of tactile fremitus, spontaneous fremitus, crackles. – Percussion: technique of percussion, resonance, hyperresonance, dullness, flatness and tympany. – Auscultation: breath sounds: vesicular, broncovesicular, bronchial and tracheal; transmitted voice sounds, adventitious (added) sounds: crackles, rhonchi and wheezes, pleural rub, stridor. Semeiological abnormalities of the following clinical conditions: pneumonia, pleurisy, pneumothorax, hemothorax. Physical Examination of the Cardiovascular System: – Inspection: careful inspection of the anterior chest, apical impulse (cardiac apex): location and features. – Palpation, apical impulse (cardiac apex) location and features, abnormal movements – Percussion: estimation of cardiac size (delimitation of cardiac dullness). – Auscultation: locations, heart sounds, systolic and diastolic extra sounds, systolic and diastolic murmurs, pericardial friction rub. Arterial pulse: assessment of heart rate and rhythm, amplitude and contour of the arterial pulse wave, bruits and thrills. Venous pulse: jugular venous pressure and contour. Arterial and venous blood pressure measurements. Semeiological features of arterial and venous, both acute and chronic, peripheral insufficiency. Physical Examination of the Nervous System: cranial nerves, motor system, sensory system, reflexes. Endocrine System Semeiotics: main signs and symptoms of both hyper and hypo.

Objectives: Appraisal of the methods used in order to explore the history and physical examination of the surgical patient. Appraisal of the methods (clinical and instrumental) employed for generating diagnoses as an iterative process that includes information gathering and hypothesis generation. Data acquisition will begin with the chief complaint, history of present illness, past medical history, and findings from the physical examination. The ratio of EBM will be employed during a number of Grand Rounds which will be focused on the empathic and holistic approach to the single patient. Program Surgery: The pain in the surgical patient. Clinics of pain: somatic pain; visceral pain; referred pain. The chest pain. Alterations of fluid and electrolytes; acid-base balance disorders; edema; fever; fever in the surgical patient. Recognition of the symptoms that indicate the presence of a surgical emergency: pallor, dyspnea, cyanosis, pain, vomiting, disorders of consciousness. Clinical characteristics of primary and secondary shock. The swellings: definition, physical examination. The physical examination of the breast and axillary region. The acute abdomen: clinical picture of peritonitis; differential diagnosis. Acute pancreatitis. Ascites. Jaundice and cholestasis. Constipation and diarrhea. The bowel obstruction: clinical characteristics of clinical, radiological and instrumental. Hemorrhages of the upper and lower digestive tract. Hemoperitoneum: spontaneous and traumatic. The physical examination of hernias: an examination of the inguinal canal and the Scarpa's triangle. Micturition disorders: Clinical characteristics of clinical and instrumental. Hematuria, pyuria, chyluria. Notes on evidence-based surgery (evidence-based surgery). Surgical Pathophysiology: pathophysiological characteristics of reflux disease. Gastric ulcer and duodenal ulcer. Pathophysiology of the biliary tract. Portal hypertension. Pathophysiological aspects of intestinal obstruction and peritonitis. Diverticular disease and chronic inflammatory diseases of the large intestine.

OBJECTIVES:

Appraisal of the methods used in order to explore the history and physical examination of the surgical patient.

Appraisal of the methods (clinical and instrumental) employed for generating diagnoses as an iterative process that includes information gathering and hypothesis generation.

Data acquisition will begin with the chief complaint, history of present illness, past medical history, and findings from the physical examination.

The ratio of EBM will be employed during a number of Grand Rounds which will be focused on the empathic and holistic approach to the single patient.

Physical Symptomatology (specific program)

- endocrine and metabolic responses to injury
- fluid electrolytes and nutritional support
- obesity and its implications in general surgery
- hemostasis
- shock
- infections
- trauma
- Surgical anatomy and clinical signs of the pathology of the neck, the abdomen and the chest and the breast
- manifestations of gastrointestinal diseases

COURSE CONTENTS (SYLLABUS)

Internal Medicine

- Medical history taking and its importance in medicine.
- Vital signs and their clinical significance.
- Physical examination of the main body districts: chest, abdomen, head and neck, skin, peripheral vascular system, joints, nodes, breast. Neurological examination.
- How to approach the patient with head pain, back pain, chest pain, abdominal pain, alterations of bowel transit or diuresis, hematuria, menorrhagia or metrorrhagia, jaundice, diarrhea, constipation, nausea, vomiting, hemoptysis, cough, dyspnea, palpitations, syncope or lipothymia, arterial hypertension, hypotension, itch, fever, cyanosis, edema, acute mental confusion, coma, and with multimorbidity.
- How to interpret the main clinical laboratory tests: blood count, glycemia, uricemia, lipid metabolism, markers of kidney injury and function, serum electrolytes, arterial blood gas analysis, markers of liver function, markers of myocardial damage, hemostasis and coagulation tests, inflammatory indexes, respiratory acidosis, and alkalosis.

- Semeiotics of the main clinical syndromes in internal medicine with some examples:

acute myocardial infarction, heart failure, acute pulmonary edema, cardiac valve diseases, pneumonia, pleural effusion, COPD, pneumothorax, acute abdomen, cirrhosis, urinary tract infections, sepsis, shock, deep venous thrombosis and acute pulmonary thromboembolism, thyroid function, stroke, meningitis.

- AI applications in diagnosis and personalized medicine

- Normal ranges of the most commonly used laboratory tests in clinical practice.

General Surgery

Pain in the surgical patient. Pain clinics: somatic pain; visceral pain; referred pain. Chest pain. Fluid and electrolyte alterations; acid-base balance disorders; oedema; fever; fever in the surgical patient. Recognition of symptoms indicating the presence of a surgical emergency: pallor, dyspnoea, cyanosis, pain, vomiting, disturbance of consciousness. Clinical features of primary and secondary shock. Swelling: definition, objective examination. Physical examination of the breast and axillary region. The acute abdomen: clinical picture of peritonitis; differential diagnosis. Acute pancreatitis. Ascites. Jaundice and cholestasis. Constipation and diarrhoea. Intestinal obstruction: clinical, radiological and instrumental features. Upper and lower digestive tract haemorrhages. Haemoperitoneum: spontaneous and traumatic. Objective examination of hernias: examination of the inguinal canal and Scarpa's triangle. Urination disorders: Clinical and instrumental features. Haematuria, pyuria, chyluria. Hints on evidence-based surgery. Surgical pathophysiology: Pathophysiological features of reflux disease. Gastric ulcer and duodenal ulcer. Pathophysiology of the biliary tract. Portal hypertension. Pathophysiological aspects of intestinal obstruction and peritonitis. Diverticular disease and chronic inflammatory diseases of the large intestine.

Learning outcomes

The students will be able to gather a focused history, perform a physical examination, and recognize normal/abnormal results of different types of exams.

The specific learning outcomes of the program are coherent with the general provisions of the Bologna Process and the specific provisions of EC Directive 2005/36/EC. They lie within the European Qualifications Framework (Dublin Descriptors) as follows:

1. Knowledge and Understanding

- Assess the physiologic principles that govern the function of the main body systems and the alterations induced by functional and structural abnormalities.
- Describe the main signs and symptoms associated with specific clinical disorders and provide a suitable explanation of the reasons underlying them.
- Differentiate the clinical from the surgical presentation and explain the distinct approaches required.

- Report a detailed anamnesis of the single patient and emphasize the importance of an empathic and holistic approach.
- Present a thorough explanation of the main diagnostic iters necessary to obtain an accurate diagnosis.
- Study a clinical case and provide an exhaustive analysis of the possible diagnostic hypothesis.

2. Applying Knowledge and Understanding

- Apply the theoretical knowledge to the clinical setting, being able to recognize the general diagnostic aspects of diseases.
- Evaluate the patient, emphasizing the findings obtained from the history, physical examination, and instrumental tests. If the mechanisms underlying these findings can be identified, the correct etiologic, anatomic, and physiologic diagnoses can usually be deduced.
- Learn to interpret appropriate laboratory and diagnostic studies.
- Perform an accurate review of systems.
- Learn the practical aspects of systemic, clinical and surgical physical examination and how to perform it.

3. Making Judgements

- Recognize the importance of an in-depth knowledge of the topics consistent with a proper medical education.
- Identify the benefits and adverse effects of any diagnostic and therapeutic interventions.

4. Communication Skills

- Present the topics orally in an organized and consistent manner.
- Use of proper scientific language coherent with the topic of discussion.

5. Learning Skills

- Identify the possible use of the acknowledged skills in the future career.
- Assess the importance of the acquired knowledge in the overall medical education process.

Teaching methods

Interactive lectures with support of slides, videos. Flipped classroom trial with discussion of clinical problems in the classroom.

Teaching tools

Power point, pdf and Word files, slides, videos, clinical cases, quiz.

Course grade determination

The exam consists of a written test. The minimum grade required is 18 out of 30. The maximum score is 30 out of 30, with Laude.

In particular, the exam will be evaluated according to the following criteria:

Failed: important deficiencies and / or inaccuracies in knowledge and understanding of the topics; limited capacity for analysis and synthesis, frequent generalizations.

18-20: knowledge and understanding of the subjects quite sufficient with possible imperfections; ability to analyze, synthesis and sufficient judgment autonomy.

21-23: Knowledge and understanding of routine topics; Correct analysis and synthesis skills with coherent logical argumentation.

24-26: Fair knowledge and understanding of the topics; good analysis and synthesis skills with rigorously expressed arguments.

27-29: Knowledge and understanding of the subjects complete; remarkable analytical skills, synthesis. Good independence of judgment.

30-30L: Excellent level of knowledge and understanding of the topics. Considerable analytical and synthesis skills and autonomy of judgment. Arguments expressed in an original way.

Recommended Readings and Textbooks

Macleod's Clinical Examination 14th Edition (available also on Amazon in the version for Kindle)

- Seidel's Guide to Physical Examination,

By Jane W. Ball, RN, DrPH, CPNP, DPNAP, Joyce E. Dains, DrPH, JD, RN, FNP, BC, DPNAP, John A. Flynn, MD,

MBA, Barry S. Solomon, MD, MPH and

Bates' Guide to Physical Examination and History-Taking

By Lynn Bickley MD

Clinical Examination: A Systematic Guide to Physical Diagnosis

By Nicholas J. Talley MD PhD FACP FRACP FRCP, Simon O'Connor MBBS FRACP DDU

Sabiston Textbook of Surgery, 19th Edition

The Biological Basis of Modern Surgical Practice (Expert Consult Premium Edition – Enhanced Online Features and

Print)

By Courtney M. Townsend, Jr., MD, R. Daniel Beauchamp, MD, B. Mark Evers, MD and
Kenneth L. Mattox