Degree in Medicine and Surgery

Integrated teaching: Diseases of Musculoskeletal System
SDS: **MEDS-19/A**
Coordinator: Matteo Guzzini, matteo.guzzini@unicamillus.org
Total number of credits: **4**

Professors:

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PREREQUISITES

Basic concepts of muscolo-skeletal anatomy and human physiology and general pathology are needed. Knowledge of important notions on calcium/phosphorus methabolism, connective tissue histology and osteo-methabolic processes (osteo-genetic and osteo-resorption) are also requested.

LEARNING OBJECTIVES

The learning objectives of the course is to provide the student the basic principles of the most common trauma and degenerative disorders of the musculoskeletal system. For each disorder condition, the most common clinical signs, the most appropriate imaging techniques to be used and the most appropriate surgical techniques will be described.

LEARNING OUTCOMES

At the end of the lessons the student should be able to:
Know the main bone and soft tissue diseases
Know the principal criteria of the classification of ortopeedic diseases and traumatologic lesions
Know the main signs and symptoms and laboratory parameters in orthopedic diseases
Know the main signs and symptoms in the traumatic musculoskeletal lesions
Know the most used clinical tests to evaluate and diagnose the different orthopaedic disorders
Know the most appropriate imaging to diagnose an orthopeedic disorders (capsuloligamentous or degenerative lesions)
Recognize the main fractures on radiographic examinations

Recognize the most frequent sport med, degenerative and musculoskeletal tumor lesions
Know the most appropriate treatments for each of the muscoloskeletal disorders.
Know the management of pharmacological, rehabilitative and thermal therapeutic strategies in orthopedic diseases and musculoskeletal lesions.

1. Knowledge and understanding
To know the physiological principles, which regulate the function of the locomotor system and the alterations induced by functional and structural abnormalities.
Knowledge of the most frequent diseases of the locomotor system of inflammatory and degenerative origin Demonstrate knowledge of diagnostic methods, prognosis and treatment of diseases of the locomotor system.
Knowledge of diagnostic methods and treatment of pathologies of traumatic nature
of the locomotor system. To know how to appropriately interpret laboratory and diagnostic examinations.

2. Applied knowledge and understanding
To be able to provide an aetiopathogenetic interpretation of a clinical picture and to indicate the diagnostic and therapy.
To be able to formulate a differential diagnosis based on specific clinical data, justifying it with coherent arguments.
To know the main techniques of rehabilitation medicine and their areas of application.
To know the practical aspects of diagnostic instruments, when to use them and how to perform them.

3. Autonomy of judgement
Recognise the importance of a thorough knowledge of the topics in accordance with adequate medical education.
Identify the fundamental role of correct theoretical knowledge of the subject in clinical practice. clinical practice.

4. Communication
Explaining arguments orally in an organised and coherent manner.
Use of appropriate scientific language in accordance with the topic of discussion.

5. Learning ability
Recognise the possible applications of the acquired skills in the future career.
Evaluate the importance of the acquired knowledge in the general medical education process.

COURSE SYLLABUS

1. General principles of fractures , Osteoarthritis
2. Pediatric Orthopaedics (clubfoot, Hip Dysplasia, Kyphosis and Scoliosis, Postural defects and physeal fractures)
3. Shoulder (instability, subacromial impingement, RC diseases, SLAP, shoulder arthritis and RC arthropathy)
4. Knee (meniscal injuries, ligament injuries, osteochondral lesions, knee arthritis)
5. Pelvis and Hip (muscle injuries, hip osteonecrosis, hip arthritis)
6. Principles of sports traumatology
7. Foot and Ankle (hallux valgus, arthritic diseases, postural disorders, tendon disorders, diabetic foot)

8. Elbow (ligament injuries, tendinopathies)
9. Hand (traumatic and degenerative diseases of hand and wrist)
10. Spine
11. Tumors (soft tissue and bone)
12. Trauma (care of the multiple injured patient, principles of fractures)
13. Upper extremity fractures
14. Lower extremity fractures
15. Spine and pelvis fractures
16. Osteoporosis

ORTHOPAEDICS AND TRAUMATOLOGY INTERNSHIP OBJECTIVES

It is of fundamental importance the approach to the patient, to the diagnostic process and therefore the therapeutic one.

The preparation should therefore include:

- Knowing how to collect the patient's accurate history to identify the possible causes of the reported symptomatology and temporal connections;
- Knowing how to perform an accurate objective examination by referring to specific diagnostic tests, interpreting them in the light of a detailed knowledge of anatomy, physiology and pathophysiology;
- Knowing how to interpret functional deficits and painful sites in order to arrive at a correct diagnosis;
- Identify essential, most useful and meaningful imaging and supporting examinations to confirm a suspected diagnostic;
- Identify the correct treatment in the light of the factors determining the choice:

1. Age of the patient;
2. Comorbidities present;
3. Patient's compliance for that specific treatment;
4. Possible complications;
5. Evaluation of pathologies associated with the orthopaedic one in that specific event;
6. Ability to manage potentially at-risk or life-threatening patients.

COURSE STRUCTURE

The Course is structured in frontal teaching, divided into lessons of 2 hours according to the academic calendar. Integrative activities will be noticed to students during the lectures

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COURSE GRADE DETERMINATION

The verification of the preparation of the students will take place through a multiple choices test. During the written examination the Examining Commission will assess the ability of the Student to apply the knowledge and will ensure that the skills are adequate to support and solve problems of orthopedic and traumatology nature. 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.

OPTIONAL ACTIVITIES

The student will have the opportunity to participate in Seminars, clinical and research internship. Those activity topics will not be included within the test.

READING MATERIALS

Mark D. Miller Stephen R. Thompson Miller's Review of Orthopaedics 7th Edition

Mancini, C. Morlacchi , “Clinica Ortopedica” Manuale-Atlante; V Edizione A cura di F.Franceschi e F Mancini; Piccin editore

Jon C. Thompson: Netter’s Concise Orthopaedic Anatomy, Elsevier (2016)