COURSE OF STUDY: MEDICINA E CHIRURGIA

ACADEMIC YEAR: 2024-2025

INTEGRATES COURSE: SPECIALITÀ MEDICO-CHIRURGICHE 5

ACADEMIC SUBJECT: - DISEASES OF THE LOCOMOTOR SYSTEM (2CFU)
- DISEASES OF THE LOCOMOTOR SYSTEM (1CFU)
- DISEASES OF THE LOCOMOTOR SYSTEM (2CFU)

CANALE AK

Main information on teaching	
Year of study	*IV*
disbursement period	*II SEMESTER*
University credits (CFU/ETCS):	*3 CFU + 1 CFU + 2 CFU*
SSD	*MED/33 (Diseases of the locomotor system)* *MED/34 (Physical and rehabilitation medicine)* *ING-IND/34 (Bioengineering: movement analysis)*
Delivery language	*English*
Frequency mode	*Obligatory*

Professor	
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Site	*Orthopedic Clinic*
Virtual site	*Microsoft Teams … Attività Tutoraggio Medicina Fisica e Riabilitativa - Corso integrato Specialità Medico-Chirurgiche 5 - Prof. M. RANIERI: codice* ***3peerby***
Receipt	*To be agreed, upon reservation by email*

Organization of teaching			
Hours			
Totali	Frontal teaching	Practice (laboratory, field, tutorial, other)	Individual study
168 *25* *48*	*24* *12* *24*	*120* *0* *0*	*24* *13* *24*
CFU/ETCSo			
6	*5 CFU*	*1*	*5 CFU*

Training objectives	Provide useful knowledge to understand all those effective means, in line with Evidence-based Medicine (EBM), in reducing the burden of disability and improving the possibilities for disabled people affected by orthopedic-traumatological pathologies.
Prerequisites	he student must possess detailed and interpretative knowledge in the cultural field of Anatomy, Physiology and Pathophysiology of the Locomotor System to

	understand the contents of the lessons and achieve the expected training objectives.

Teaching methods	Frontal teaching carried out through lessons held "ex cathedra" by the teacher with implementation both with forms of active teaching based on the reciprocity of action between teacher and student and with forms of interactive teaching consisting of presenting clinical cases to students, stimulating them to look for the solution through attempts guided by the teacher through opinions, suggestions, explanatory hypotheses. Computer systems will be used during the lesson (PowerPoint presentations, videos, bibliographic searches on web platforms such as PubMed, Scopus, ISI Web, Google Scholar, etc.).

Expected learning outcomes	
DD1 Knowledge and understanding	Il corso è finalizzato a fornire strumenti di analisi e valutazione per identificare, descrivere e misurare le principali patie a responsabilità ortopedico-traumatologica ad esordio acuto, croniche e/o cronico-evolutive, gli effetti dei diversi interventi riabilitativi, in termini di efficienza e qualità, dove tali nozioni potranno essere fruibili in ambito professionale per la prevenzione delle complicanze e le comorbilità associate. Nello specifico si propone di fornire agli studenti nozioni utili alla conoscenza e comprensione, per quanto riguarda: Fornire la conoscenza delle principali affezioni muscolo-scheletriche di natura sia ortopedica che traumatologica Fornisce le conoscenze base sulle comuni patologie ortopediche e traumatologiche riscontrabili in età evolutiva, adulta e nel grande anziano, fornendo le nozioni su diagnosi e trattamento conservativo e chirurgico. Fornire le nozioni sulle principali affezioni di natura ortopedica e traumatologica, soffermandosi su: epidemiologia, eziologia, patogenesi, caratteristiche cliniche, indagini strumentali, diagnosi differenziale, prognosi, complicanze, trattamento conservativo e chirurgico. Inquadramento nel determinare la diagnosi di base. Determinazione della capacità funzionale, dell'attività, della partecipazione e dei fattori contestuali. Impostazione di un Progetto Riabilitativo Individuale in Team multidisciplinare. Conoscenza, esperienza e proposta di applicazione di trattamenti riabilitativi nell'ambito della Medicina Riabilitativa in patie a responsabilità ortopedica-traumatologica. Valutazione del dolore e conoscenza dei farmaci efficaci.
***DD2* Applied knowledge and understanding**	Valutazione e misura del risultato. Prevenzione e gestione delle complicanze. Prognosi su malattia/condizione di salute e risultati della Medicina Riabilitativa. Conoscenza della tecnologia riabilitativa ed in particolare delle Terapie Fisiche. Le modalità di prescrizione delle Protesi, Ortesi ed Ausili. Il livello di conoscenza particolareggiata dovrà stimolare la capacità di comprensione e soprattutto il livello di competenza decisionale nell'utilizzare il ragionamento clinico appresso (problem solving) per la definizione degli obiettivi del progetto riabilitativo. La conoscenza e la capacità di comprensione applicata sarà stimolata dalla padronanza delle scale validate in Medicina Riabilitativa utili nella la raccolta di dati riabilitativi e per la compilazione della cartella medica riabilitativa. Tali nozioni sono alla base delle competenze dello

DD3-5 **Transversal skills**	studente nello stilare la diagnosi fisiatrica, anche secondo il modello ICF, la conseguente prognosi e la applicazione particolareggiata delle specifiche sinergie mediche di intervento. Verificare il raggiungimento degli obiettivi a breve, medio e lungo termine nelle persone con disabilità e saper valutare il raggiungimento e il mantenimento del massimo livello di autonomia nella fase degli esiti. Le competenze attese saranno riferite alla padronanza di conoscenze nell'ambito della Medicina Riabilitativa, ben integrate nell'insieme della personalità e della maturazione dello studente Medicina e Chirurgia. **Autonomy of judgement** Through the study of theoretical contents, the student will achieve the necessary ability of critical evaluation and reflection in daily practice for the benefit of the planning of therapeutic paths and rehabilitation programs in pathologies with proven orthopedic-traumatological responsibilities and to respond effectively to health needs, opting for the best therapeutic rehabilitation strategies, identifying suitable approaches and tools according to EBM. **Communication skills** The acquisition of both the mastery of a technical language and of an adequate medical-specialist terminology will allow the development of communication skills, also stimulated through discussion/comparison in the classroom, guaranteeing the student a more effective individual approach in the relationship in a multidisciplinary team and with the disabled person and the caregiver. **Ability to learn independently** Learning ability will be stimulated through audio-visual presentations to support ex-chatedra teaching and classroom discussion (aimed at verifying actual understanding of the topics covered). Learning ability will also be encouraged by using supplementary teaching aids, such as the presentation of rehabilitation intervention guidelines, scientific articles, clinical cases, etc. in order to develop application skills, broadening and updating the cognitive horizons necessary to undertake subsequent studies with a high degree of autonomy. At the end of the course the student must be able to plan and verify the process in the field of Physical and Rehabilitation Medicine, through objective evaluation and effective medical therapeutic methods, within the Rehabilitation Setting (Hospital, Territory) most suitable, to promote the maximum possible recovery and integration of the person affected by disabling outcomes from pathologies of the locomotor system.
Teaching contents	
Program	• General traumatology: fractures, dislocations, sprains and contusions • Osteoarthritis and fragility fractures • Osteoarthritis: conservative and surgical treatment • Tendinopathies • Low back pain • Scoliosis • Congenital hip dysplasia • Congenital clubfoot • Hand surgery ******************************* • The ICF (International Classification of Functioning) classification, general information.

	• The evaluation and treatment of pain in rehabilitation. • Physical Therapies (outlines): o Physiokinesitherapy Phase of the Illness o Electrical Energy (Iontophoresis, TENS, Diadynamics, Electrostimulation) o Sound energy (Ultrasound and Shock Waves) o Thermal Energy (Laser Therapy, Tecar Therapy, Infrared, Ultraviolet A-B-C, etc.) o Magnetic Energy (Magnetotherapy) • Rehabilitation Medicine in the recovery of the main orthopedic-traumatological pathologies: o Shoulder pathologies; o Wrist-hand pathologies; o Rachialgia without and/or with root involvement; or Scoliosis o Coxarthrosis, Gonarthrosis, Hip and knee prostheses; or Fractures • Orthoses, Prostheses and Aids in Rehabilitation Medicine, general information. ******************************** • Biomaterials: - Organic – Inorganic - Metals - Ceramics - Polymers - Composites - Natural • Sterilization • Newton's laws • Elastic behavior • Elastic module • Plastic Behavior • Viscoelastic behavior • Biocompatibility • Biological environment • Phenotypes • Sensors • Applications of Biomaterials • Stories of Biomechanics • Pace Analysis • Rating scales • Instrumental analyses • Optical system • Dynamometer system • Electromyographic techniques • Inertial systems • Application areas • Walking: Stance – Swing • Space-time parameters • Medical devices • Classification of medical devices • Labeling • UNI – EN – ISO – CE - FDA

Reference texts	-Randelli, Della Valle. Ortopedia e Traumatologia. Piccin 2022. ISBN: 978-88-299-3198-9 - Sessa-Villani. Malattie dell'Apparato Locomotore Ortopedia e Traumatologia. Monduzzi Editore. -O.M.S. Organizzazione Mondiale della Sanità. ICF classificazione Internazionale del Funzionamento, della Disabilità e della Salute. Editing Serena Banal. Edizioni Erickson ISBN: 88-7946-431-0. -SARACENI – FLETZER <L'esercizio in Medicina Riabilitativa> ISBN: 978-88-299-1976-5 Piccin Editore -Padova- Codice Piccin: 1909650 - Pagine: 660. -ROTHSTEIN J.M. et al. <Manuale di Medicina Riabilitativa> ISBN: 88-7287-299-5 Antonio Dalfino Editore / Medicina Scienze -Roma- Pagine: 1284. - Appunti forniti dal docente in formato digitale (file word, pdf, power-point, ecc.). -Biomateriali delle scienze dei materiali alle applicazioni cliniche - Patron Editore -Studio Pressorio del piede e del passo – Principi e applicazioni pratiche – Luca Russo Ph.D -Dispositivi medici e assicurazione di qualità – di Silvia Stefanelli, Lia Rimondini
Notes to reference texts	PubMED – SCOPUS – WOS - Google Scholar
Teaching materials	Notes provided by the teacher in digital format (Word file, PDF, Power-Point, etc.) will be uploaded and usable for at least 3 years on Microsoft Teams in the TEAM class material folder "Attività Tutoraggio Medicina Fisica e Riabilitativa - Corso integrato Specialità Medico-Chirurgiche 5 - Prof. M. RANIERI" – *Codice:* ***3peerby***

Assessment	
Learning assessment methods	The verification of learning takes place through an oral test where the topics of the questions are relevant to the topics covered during the lessons, as part of the Course. The purpose of the test is to highlight the level of specific knowledge achieved by the student, evaluate the ability to orient oneself in the problems covered, evaluate the skills acquired regarding the proposal of solutions to the problems being studied.
Evaluation criteria	*In order to demonstrate that the learning outcome has been achieved and what level has been reached, the following will be taken into account:* *• Knowledge and understanding:* *Ability to discursively organize knowledge (unsatisfactory, adequate, good, excellent)* *• Applying knowledge and understanding:*

	Decision-making competence in using learned clinical reasoning (unsatisfactory, adequate, good, excellent) *• Autonomy of Judgment:* *Critical reasoning skills (unsatisfactory, adequate, good, excellent)* *• Communication knowledge and understanding:* *Quality of presentation and competence of specialist vocabulary (unsatisfactory, adequate, good, excellent)* *• Capacity to continue learning:* *Adequacy and effectiveness in the ability to learn from self-study (unsatisfactory, adequate, good, excellent)*
Final exam and grading criteria	The assessment of final exam takes place collegially (with the Professor of the other modules of the integrated course) through an oral interview. The topics of the questions will be relevant to the topics covered during the lessons, as part of the Course. The grade of the exam is given out of thirty (30), the exam passed when a score greater than or equal to 18. To achieve a high evaluation, the student must have developed independent judgment and adequate argumentation and presentation skills; therefore, honors may be awarded at the discretion of the President after having consulted collegially with the teachers of the modules of the Integrated Course.