COURSE OF STUDY *MEDICINA E CHIRURGIA*

ACADEMIC YEAR *2024/25*

INTEGRATED COURSE: *NEUROLOGICAL SCIENCES (8 CFU/ECTS)*

ACADEMIC SUBJECT:

- *NEUROLOGY (5 CFU/ETCS),*
- *NEURORADIOLOGY (1 CFU/ETCS),*
- *NEUROSURGERY (5 CFU/ETCS),*
- *PHYSICAL AND REHABILITATION MEDICINE (5 CFU/ETCS)*

CANALE LZ

NEUROLOGY (4CFU)

General information	
Year of the course	V year
Academic calendar (starting and ending date)	I semester
Credits (CFU/ETCS):	5 CFU
SSD	MED 26
Language	Italian
Mode of attendance	Mandatory attendance

Professor/ Lecturer	
Name and Surname	Logroscino Giancarlo-Paolicelli Damiano
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Telephone	///
Department and address	University of Policlinico Bari
Virtual room	
Office Hours (and modalities: e.g., by appointment, online, etc.)	by mail contact

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
48	48		
CFU/ETCS			
5	5		

Learning Objectives	To provide detailed information about the anatomy, physiology and pathophisiology, diagnostics and treatment principles (including rehabilitation) of the main neurological and neurosurgical diseases.
Course prerequisites	The student should know the anatomy and physiology of Central and peripheral nervous system

Teaching strategy	Frontal lessons
Expected learning outcomes in terms of	To develop specific knowledge about diseases of the nervous system. To acquire the methodology to diagnose and treat neurological diseases. To attend neurological outpatient and inpatient departments
Knowledge and understanding on:	**Clinical neurological semiotics (**motor and sensory systems, cognition, intracranial hypertension – clinical-antomical correlations) **Instrumental neurological semiotics** (cerebro-spinal fluid, electroencephalography, electromiography, evoked potentials, basics of CT, MRI, and angiographic studies of the central nervous system) **Headache and neuralgia** **Cerebrovascular diseases** (ischemic and hemorragic stroke) **Epilepsy and Epileptic status** **Meningoencephalitis** (Definition, epidemiology, etiology and classification, Clinical picture, Diagnosis and differential diagnosis, Principles of treatment) **Intracranial hypertension and brain herniation syndromes** **Neuroimmunologic diseases** **Neurodegenerative diseases (Amyotrophic lateral sclerosis, Parkinsonisms, dementias, Huntington's disease)** **Movement disorders** (parkinsonism, tremor, dystonia, tic, myoclonus, chorea) **Dementia (**etiology, mechanisms, and classification) **Radiculopathies, mononeuropathies and plexopathies, and polineuropathy** (definition, diagnosis, etiology, mechanisms, and classification) **Neuromuscular diseases (**miasthenia gravis) **Consciousness disorders** (definition, diagnosis, etiology, mechanisms, and classification)

Applying knowledge and understanding on:	
Soft skills	
Syllabus	
Texts and readings	A. Berardelli, G Cruccu. La Neurologia della Sapienza; M.H. Greenberg. Handbook of Neurosurgery. Tenth Edition Thieme; Manual of Neuroradiology: Authors: Andreula - Cirillo - Gallucci – Scarabino, Publisher: Poletto; Neuroradiology: Author: Colosimo, Publisher: Edra
Notes, additional materials	
Assessment	

Assessment methods	The assessment of achievement of the course objectives will be conducted by oral examination
Assessment criteria	Oral assessment will be graded out of thirty . Laude could be assigned according to the judgement of the president of the commission
Final exam and grading criteria	The student will be evaluated by an oral test. The final grade is awarded as an eligible grade.
Further information	

UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

NEURORADIOLOGY (1 CFU)

Main Information about the Course	
Year of study	*5th year*
Delivery period	*I SEMESTER*
University Credits (CFU/ETCS):	*1 CFU*
SSD	*Neuroradiology (Med 37)*
Language of Instruction	*Italian*
Attendance Mode	*Mandatory in-person*

Professor	
Name and Surname	*Nicola Maggialetti*
e-mail address	*Nicola.maggialetti@uniba.it*
Phone	/
Location	*Institute of Radiology*
Virtual Office virtale	/
Office Hours	*By appointment (to be arranged with the instructor via email)*

Teaching Organization			
Hours			
Total	Lecture-based Teaching frontale	Practical(lab, field excercise, etc.)	Individual study
12	*12*	/	/
CFU/ETCS			
1	*1*	/	/

Learning Objectives	By the end of the course, students will understand the diagnostic, therapeutic-interventional, and research capabilities of Neuroradiology. Students will learn imaging semiotics of the main pathological conditions in neuroradiology. Students will also deepen their understanding of the indications for examinations and diagnostic protocols.
Prerequisites	No specific prerequisites beyond those required by the teaching regulation in terms of prerequisites.

Teaching Methods	Lecture-based teaching; discussion of clinical cases.

Expected Learning Outcomes	
DD1 Knowledge and Understanding	**Dublin Descriptor 1: Knowledge and Understanding** The lectures aim to enable students to understand the potential of various imaging methods in the neurological field. They will learn about the advantages and disadvantages of different study technologies and understand the main pathological conditions. By the end of the course, students should be able to: • Identify different imaging methods. • Understand the applications of different imaging methods.

DD2 **Applying Knowledge and Understanding** *DD3-5* **transversal competences**	**Dublin Descriptor 2: Applying Knowledge and Understanding** Teaching activities aim to develop the ability to interpret the main pathological conditions in neuroradiology. By the end of the course, students should be able to: Interpret the main pathological conditions in neuroradiology and select the most appropriate diagnostic and therapeutic path for each case. **Dublin Descriptor 3: making Judgments.** Students must be able to gather and interpret clinical data and neuroradiological findings, demonstrating critical thinking and independent judgment in interpreting symptoms and signs to formulate an appropriate diagnostic plan. By the end of the course, students should be able to: • Formulate diagnostic hypotheses based on critical reasoning from history and physical examination. • Set up a diagnostic plan based on diagnostic hypotheses. **Dublin Descriptor 4: Communication Skills** Students should acquire the ability to communicate with both specialist and non-specialist interlocutors. By the end of the course, students should be able to: • argue using specific nomenclature (specialist vocabulary) or simple but appropriate terminology in communication with patients and relatives. **Dublin Descriptor 5: Learning Skills** Students must acquire the ability to learn independently. By the end of the course, students should be able to update themselves independently by: •Researching scientific literature. •Critically reading scientific articles. •Consulting guidelines, regional/national notes, company diagnostic and therapeutic pathways (PDTA), and drug package inserts.
Course Content (Program)	**The course consists of lectures. The program includes:** **• Basics of CT, MRI, and angiographic studies of the central nervous system.** **• Neuroradiological anatomy and semiotics.** **• Applications and indications of advanced MRI studies.** **• Diagnostic pathways and semiotics of cerebrovascular pathology: acute ischemic stroke, vascular malformations, intracerebral hemorrhages.**

	• **Role of interventional neuroradiology in emergencies and elective situations.** • **Study techniques and pathologies of the epi-aortic trunks.** • **Neurodegenerative diseases: dementias.** • **Role of imaging in epilepsy.** • **Tumor pathology.** • **Pathology of the ponto-cerebellar angle.** • **Pathology of the sella turcica.** • **Main pathological conditions and study techniques of the spine.**
Reference Texts	• *Manual of Neuroradiology: Authors: Andreula - Cirillo - Gallucci – Scarabino, Publisher: Poletto* • *Neuroradiology: Author: Colosimo, Publisher: Edra*
Reference Texts notes	
Teaching materials	

Evaluation	
Assessment methods	*Method: Oral (at the end of the course)* *Type: Interview (open question, critical discussion of a clinical case)* Oral exam concurrent with the final exam of the other integrated course teachings
Evaluation criteria	Students are expecting to demonstrate: • Knowledge and Understanding: o Complete educational program. • Applying Knowledge and Understanding: o Recognize and describe the main pathological conditions in neuroimaging; o identify the correct prescription pathway based on different clinical conditions. • Judgment Autonomy: o Identify the most suitable imaging techniques for each specific patient. • Communication Skills: o Argue using appropriate and specific nomenclature (specialist vocabulary); o quality of presentation.
Learning Measurement and Final Grade Attribution Criteria	The final grade is assigned in thirtieths. The exam is considered passed when the grade is greater than or equal to 18 for each teaching of the integrated course. A high rating is given when the student demonstrates developed judgment autonomy and adequate argumentation and presentation skills.
Other	/

UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

NEUROSURGERY (1 CFU)

Main Information about teaching	
Year of course	V year,
Discharge period	I semester
ETCS Credits:	1
SSD	MED 27
Language	Italian
Course attendance	In-person

Teacher	
Name and Surname	Signorelli Francesco
e-mail	francesco.signorelli@uniba.it
Phone	
Location	Policlinico di Bari

Training times			
Hours			
Total	Frontal teaching	Practice (laboratory, practice, other)	Individual study
12	12	-	-
ETCS Credits			

Training Objectivies	The training activity aims to give the anatomical, physiological and physiopatological knowledge of the most important neurosurgical conditions in the adult and pediatric age. Anatomo-clinical correlations, differential diagnoses, and treatments are included.

Pre-requisites	The student must have detailed knowledge of human anatomy and physiology of the central, peripheral and neurovegetative nervous system and knowledge in the neurological field.
Intended learning outcomes	
1 Knowledge and understanding	**1**: Knowledge and understanding (at the end of teaching); • Specific knowledge of the topics • Topographical and anatomical knowledge necessary for the definition of the surgical strategy
2 Applied knowledge and understanding	**2**: Applied knowledge and understanding (the skills acquired) • Ability to perform a rational diagnostic and therapeutic work-up management
3-5 Transversal skills	**3**: Critical and judgmental ability • Optional practical internships in the ward or operating room contribute to the development of these skills

Program	**Hydrocephalus** - Composition of cerebrospinal fluid (CSF) and physiopathology of CSF flow - Definition, epidemiology, etiology and classification of hydrocephalus - Clinical picture of acute, chronic and normal pressure hydrocephalus - Diagnosis and differential diagnosis - Principles of treatment **Intracranial hypertension** - Definition, epidemiology, etiology - Physiopathology - Clinical picture - Diagnosis and measure of intracranial pressure - Brain herniation syndromes - Principles of treatment **Spontaneous brain hemorrhage and brain vascular malformations** **Traumatic brain injuries and hemorrhagic complications** **Traumatic spine and spinal cord injuries** - Definition, epidemiology, etiology and classification - Clinical picture - Diagnosis and differential diagnosis - Principles of treatment **Tumors of the Central Nervous System** - Definition, epidemiology, etiology and classification - Clinical picture - Diagnosis and differential diagnosis - Principles of treatment **Radiculopathies, mononeuropathies and plexopathies** - Definition, epidemiology, etiology and classification - Clinical picture - Diagnosis and differential diagnosis - Principles of treatment
Texts and books	- M.H. Greenberg. Handbook of Neurosurgery. Tenth Edition Thieme
Training materials	- Lecture presentations

Evaluation	
Evaluation methods	Oral test, in-person or written test, in-person. Although the questions are relevant to the course, it is important to have knowledge of anatomy and physiology of the nervous system. The purpose of the test is to determine the level of specific knowledge reached by the student and evaluate his ability to perform diagnosis and treatment of the diseases studied. The evaluation will be expressed in thirtieths.

Evaluation criteria	- Knowledge and understanding skills: ability to quickly identify the required topic and to present it clearly and succinctly - Knowledge and understanding applied: ability to use the acquired knowledge to explain the medical and surgical management of clinical cases that may be discussed during the examinationAutonomia di giudizio: capacità di orientarsi nel work-up di gestione delle patologie studiate - Communication skills: use of the appropriate technical vocabulary - Ability to learn: ability to orient oneself with regard to questions
Criteria for measuring learning and awarding the final grade	**Failure:** insufficient knowledge of the course topics, insufficient assessment and reasoning skills, lack of basic legal knowledge **18 to 21:** sufficient or barely sufficient; minimum knowledge of the institutions and the issues addressed during the course; presence of gaps not particularly relevant **22 to 24:** medium knowledge; no particular deepening and gaps that can be filled in the overall training; **25 to 27:** generally good preparation; technical language and adequate expressive ability; **28 to 30:** excellent preparation; technical language and precise expressive ability; **30 cum laude:** preparation, technical language, expressive and argumentative skills of the highest level

PHYSICAL AND REHABILITATION MEDICINE (1CFU

General Information	
Year of the course	5
Academic calendar (starting and ending date)	*I semester*
Credits (CFU/ETCS)	1 CFU
SSD	MED/34 (Physical and Rehabilitative Medicine)
Language	Italian language/
Mode of attendance	Mandatory attendance
Language	Italian language

Professor / Lecturer	
Name and Surname	Ranieri Maurizio
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Telephone	///
Department and address	Bari General Hospital Giulio Cesare Square 11 Bari (Italy)
Virtual room	
Office Hours (and modalities, e.g., by appointment, online, etc.)	appointment by e-mail

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
25	*12*	*0*	*13*
CFU/ETCS			
1	*0,48 CFU*	*0*	*0,52 CFU*

Learning Objectives	. At the end of the lessons, the student must have acquired the knowledge relating to the rehabilitation project of people in adulthood and development. In particular, the course aims to provide basic knowledge relating to the rehabilitation care of people with neurological disabilities, applying diagnostic procedures, pharmacological treatments, instrumental and robotic rehabilitation methods, with the involvement of the rehabilitation team All this ,in full compliance with EBM (Evidence Based Medicine) which will be a continuous reference in the lessons presented
Course prerequisites	The student must possess detailed and interpretative knowledge in the cultural field of Anatomy, Physiology and Pathophysiology of the Nervous System to understand the contents of the lessons and achieve the expected educational objectives.

Teaching strategies	Frontal teaching; simulation/discussion of clinical cases.. Information 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 in terms of	
Knowledge and understanding on:	**Dublin Descriptor 1: Knowledge and understanding**

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	The frontal teaching will be aimed at acquiring useful knowledge for understanding the PRI (Individual Rehabilitation Project) especially in the outcomes of neurological diseases; the meaning of "limitation of ability" and "restrictions on participation" according to the International Classification of Function, Disability and Health (I.C.F.) in neurological diseases • Knowledge of the physiatric objective examination and some scales for evaluating strength, muscle tone disorders, fatigue and disabilities, also in terms of the need for assistance for the patient. • Provide knowledge of the instrumental diagnostics most used in the rehabilitation field, pharmacological therapy, aids, orthoses and prostheses, robotics and non-invasive brain stimulation techniques; • Ability to understand the interventions of the physiatrist, the rehabilitation team as well as the rehabilitation programmes. At the end of the course the student must be able to: • Collect basic information useful for formulating the PRI
Applying Knowledge and understanding on:	**Dublin Descriptor 2: Ability to apply knowledge and understanding** The teaching activities will be aimed at acquiring the following skills: • Evaluate the residual capability of the person with disability as a biopsycho-social unit • Correlate clinical data, limitations in activities of daily living (ADL) and instrumental activities of daily living (IADL) with the therapeutic rehabilitation notions proposed during the course . At the end of the course the student must be able to: • Apply person-oriented physiatric assessment as a bio-psycho-social unit: ▯ Collect data relating to impairment, disability and handicap; collect information about restrictions on social and work participation activities; integrate psychological and family resources and caregiver involvement into the assessment ▯ Perform a neurorehabilitative physical examination
Soft skills:	**Dublin 3 descriptor: critical and judgment skills** The students must have the ability to collect and evaluate clinical data, limitations and residual functional capabilities of the subject in order to demonstrate: • Critical ability and independent judgment in interpreting the residual functional capabilities of the subject in order to formulate rehabilitative diagnostic hypotheses and appropriate care for the patient At the end of the course the student must be able to • Formulate diagnostic-therapeutic rehabilitation hypotheses on the basis of critical reasoning; • Set up a possible diagnostic-therapeutic rehabilitation plan **Dublin 4 descriptor: ability to communicate what has been learned.** The male/female students must acquire: • Communication skills with specialist and non-specialist interlocutors; At the end of the course the student must be able to:

	• Argue using specific nomenclature (competence in the use of specialist vocabulary), or simple (but sufficiently appropriate) nomenclature in communicating with patients and relatives. **, Dublin 5 descriptor: ability to continue studying independently throughout life**. The students must have acquired: • Ability to learn independently; At the end of the course the student must be able to update himself/herself independently: • Searching the scientific literature; • Being able to critically read a scientific article; • Consulting the Guidelines, the regional/national Notes, the company Diagnostic and Therapeutic Paths (PDTA), the drug information leaflets
Syllabus	
Content Knowledge	*The I.C.F. classification (International Classification of Functioning), insights into activities and participation, barriers and facilitators for people with neurological disabilities.* *The course is divided into frontal teaching with cognitive objectives and interactive teaching. The program is structured as follows:* *Neuropathological bases and rehabilitation guidelines:* *The ICF (International Classification of Functioning) classification, general information* *Rehabilitative management in amyotrophic lateral sclerosis* *Rehabilitation project in Parkinson's disease* *Dysphagia in neurological disabilities* *Disorders of consciousness (coma and unresponsive wakefulness) and methods of diagnostic therapeutic rehabilitation approach* *Rehabilitative care of the person with multiple sclerosis* *Facial paralysis: etiopathogenesis, diagnostic-therapeutic rehabilitation approach* *Afferent Disorders* *Rehabilitation in the aftermath of stroke* *Disabling outcomes of head and spinal cord trauma* *Spasticity modulation* *Infantile Cerebral Palsy outcomes and rehabilitation management* *Rehabilitation Methods, Advanced Technologies:* *Vibration therapy with nanotechnologies and sensors, TENS, Functional Electrical Stimulation (FES))* *Non-invasive brain stimulation: TDCs and TMS* *Robotics*
Texts and readings	-O.M.S. International Classification of Functioning, Disability and Health. Editing Serena Banal. Edition Erickson ISBN: 88-7946-431-0. • Therapeutic Exercise. Fundamentals and techniques Kisner and Colby -John Borstad Piccin 2019 • 2021. Manual of Physical and Rehabilitation Medicine by C. Foti, M. Monticone. Edra. • Principles of Physical and Rehabilitation Medicine -Stefano Masiero Piccin 2023

	Chapter 42 -Dysphagia in neurological diseases-2021. Manual of Physical and Rehabilitation Medicine by C. Foti, M. Monticone. Edra - Notes provided by Professor in digital format (word, pdf, power-point, etc.).
Notes, additional materials	PubMED – SCOPUS – WOS - Google Scholar
Repository	Notes provided by the teacher in digital format (word, pdf, power-point, etc.), will be uploaded and usable material folder of the TEAM class "Physical and Rehabilitation Medicine Tutoring Activities - Integrated course of Neurological Sciences - Prof. M. Megna" –

Assessment	
Assessment methods	*Learning assessment : oral (at the end of the course)* *Type: interview with questions relating to the program carried out* *The interview is aimed at verifying that the student has adequate knowledge of the study program.*
Assessment criteria	The student is expected to be able to demonstrate during the assessment: • Ability to learn, knowledge and understanding: o Complete educational program • Applied knowledge and understanding: Knowledge of the physical physical examination in disabilities, also in terms of the need for assistance for the patient. Ability to understand the interventions of the physiatrist, the rehabilitation team as well as the rehabilitation programmes. Ability to perform a neurophysiatric physical examination; • Independent judgment: o Formulate rehabilitation planning hypotheses based on critical reasoning; o Set up a diagnostic-therapeutic-rehabilitation plan • Communication skills: o Arguing using specific and appropriate nomenclature (competence in the use of specialist vocabulary); o Quality of exposure;
Final exam and grading criteria	The assessment of final exam takes place collegially (with the Professor of the other academic subject 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 Professor of the modules of the Integrated Course.
Further information	