

## FONDAMENTI DEI PROCESSI DIAGNOSTICI E TERAPEUTICI (INT006)

### 1. language

Italian.

### 2. course contents

Coordinator: Prof. ANNA RUBINI

Year Course: 2<sup>nd</sup>

Semester: 1<sup>st</sup>

UFC: 6

Modules and lecturers:

- DIAGNOSTICA PER IMMAGINI E RADIOPROTEZIONE (INT033) - 1 CFU - SSD MED/36 - Prof. Stefano Sbarbati
- FARMACOLOGIA (INT034) - 2 CFU - SSD BIO/14 - Prof. Giovanna Petrucci
- INFERMIERISTICA CLINICA (INT035) - 2 CFU - SSD MED/45 - Prof. Anna Rubini
- PSICOLOGIA CLINICA (INT036) - 1 CFU - SSD M-PSI/08 - Prof. Massimiliano Luciani

### 3. BIBLIOGRAPHY

#### ***Bibliography and in-depth texts for Clinical Nursing***

- Fondamenti di assistenza infermieristica secondo Kozier ed Erb. Concetti, procedure e pratica di Audrey Berman, Shirlee J. Snyder, GERALYN FRANDSEN (Autori), Maria Grazia De Marinis (a cura di), Ed. Italiana Piccin 2017 cap. 28 e 29
- Assistenza infermieristica in area critica e in emergenza, Pierluigi Badon Gian Domenico Giusti, Ed. Ambrosiana 2022
- Procedure infermieristiche di Pierluigi Badon, Marta Canesi, Alessandro Monterosso (Autori) Ed. Ambrosiana, 2018
- Materiale didattico fornito dal docente

#### ***Reference Bibliography for Pharmacology***

- Clark MA, Finkel R, Rey JA, Whalen K. Le basi della farmacologia. Bologna: Zanichelli; ultima edizione.
- Package didattico (slide, articoli)

#### ***Reference bibliography for Diagnostic imaging and radiation protection***

- Materiale didattico fornito dal docente comprensivo di dispense in cui sono riportati riferimenti bibliografici.
- Decreto legislativo 187/2000 (attuazione della direttiva 97/43 euratom in materia di protezione sanitaria delle persone contro i pericoli delle radiazioni ionizzanti connesse ad esposizioni mediche)
- Standard di sicurezza in Risonanza Magnetica di Giannelli, Mattozzi, Campanella 2013 documenti INAIL

#### ***Reference bibliography for Clinical Psychology:***

- James H. Hansell, Lisa K. Damour Abnormal Psychology Editore: John Wiley and Sons Ltd (2008) Capitoli: Cap 1 “what is psychopathology?”; Cap 2 “Explaining Abnormality”; Cap 3 “Classifying Abnormality: diagnosis, assessment, and research”; Cap 11 “Personality and the Personality Disorders”; Cap 12 “Psychosis and Schizophrenia”; Cap 14 “Cognitive Disorders”.
- M. Biondi (a cura di) DSM-5. Manuale diagnostico e statistico dei disturbi mentali - Quinta Edizione Raffaello Cortina Editore (2014)

#### 4. LEARNING OBJECTIVES

The course of Fundamentals of Diagnostic and Therapeutic Processes inscribes its educational objectives within the overall objectives of the Degree Course in Nursing Sciences, including the main one of making the student achieve, through an integrated study of the subjects covered by the teaching modules, the knowledge as well as the necessary interpretative and instrumental skills for the profession in the nursing field. Specifically, the integrated course aims to describe the common invasive and non-invasive diagnostic and therapeutic procedures, outline the nursing responsibilities in patient care before, during and after the procedure, with further attention to the psychological sphere. The training course aims to provide students with the knowledge and methodological tools to assist the patient while preserving his safety and that of the operator.

##### **Knowledge and understanding (Dublin 1)**

The student must demonstrate knowledge of diagnostic and therapeutic procedures and nursing responsibilities in the administration of drugs, in patient assistance during diagnostic procedures and in the care relationship with the patient.

##### **Applying knowledge and understanding (Dublin 2)**

Knowledge and understanding skills must be used to develop application skills. The study aimed at the acquisition of theoretical skills will be accompanied by that of concrete cases for the purpose of acquiring the indispensable applications of the interpretative activity to the factual reality, also drawing on clinical and hospital cases. The student must be able to describe the phases of diagnostic-therapeutic procedures and to formulate care interventions that guarantee patient safety with particular attention to the approach with the patient in the biopsychosocial perspective. This knowledge will be the prerequisite for the indispensable future deepening of more specific contents during studies in the medical-health field.

##### **Making judgements (Dublin 3)**

The student must be able to identify and design the assistance required in relation to the various types of diagnostic tests (invasive and non-invasive). He must be able to integrate the knowledge and skills learned and formulate judgments even for particular situations based on the patient's condition and the most recent guidelines.

##### **Communication skills (Dublin 4)**

The student must be able to communicate the knowledge acquired in a clear and unambiguous way, using the technical language correctly and adapting it to the level of understanding of the interlocutor.

##### **Learning skills (Dublin 5)**

The student must demonstrate the ability to deepen the topics covered independently by consulting bibliographic sources or through the elaboration of works provided by the teacher. The student will

have to acquire advanced skills for further studies of a more specific nature, based on subsequent professional training needs related to his or her specialist field.

## 5. prerequisites

It is necessary to have acquired the knowledge related to the teachings of Molecular Basis of Life, Morphological and Functional Basis of Life and General Clinical Nursing and Elements of General Pathology.

## 6. TEACHING METHODS

For the purpose of acquiring the skills and application skills described above, the integrated course will take place through lectures in which adequate space will be dedicated to in-depth studies on the case studies guided by the teacher. In particular, lectures will be held with the presentation of examples and illustrations of summary tables, guided exercises, case studies, group and/or independent exercises, presentation of analysis results, verification and comparison of hypotheses.

**Knowledge and understanding (Dublin 1):** Lectures include the presentation of examples and illustrations of summary tables

**Applying knowledge and understanding (Dublin 2):** The lesson meetings include guided exercises, case studies, group and/or independent exercises

**Making judgements (Dublin 3):** Presentation of results of analysis, verification and comparison on hypotheses with the guidance of the teacher.

**Communication skills (Dublin 4):** presentation and comparison in the classroom of the results derived from the working groups and acquisition of specific clinical terminology

**Learning skills (Dublin 5):** assignment of in-depth topics in relation to the contents of the program in order to acquire a methodology of knowledge research.

## 7. OTHER INFORMATIONS

The assiduity of attendance as well as the quality of participation in the lessons can be taken into consideration as indicative elements of the student's application according to the educational objectives and constitute a prerequisite for an optimal path, producing the best results. The teachers are available for information on the course and clarifications on the lessons by appointment agreed by e-mail.

## 8. METHODS FOR VERIFYING LEARNING AND FOR EVALUATION

The student must have passed the exam of General Clinical Nursing and Elements of General Pathology to take the exam of Fundamentals of Diagnostic and Therapeutic Processes, as per the prerequisites indicated in the study plan and by the Teaching Regulations of the Degree Course. The student's learning level is assessed through a final exam which includes an oral test aimed at verifying the following dimensions:

- knowledge of the fundamental topics of the disciplines of the integrated course; the ability to connect the different areas of the disciplines of the integrated course and to apply theoretical concepts to practical examples of case analysis submitted to his attention

- the correctness and clarity of the presentation; the ability to focus, structure and elaborate specific concepts
- the correctness of the solutions to the proposed analytical problems.

The final evaluation of the course will be expressed in thirtieths and the grade will be the one resulting from the weighted average of the marks obtained in each test of the individual disciplines. The test is considered passed with a minimum score of 18/30.

Honors may be awarded, upon unanimous opinion of the Examination Committee, to those who have obtained a final grade of 30/30

That said, the exam will be considered passed and will be recorded if the admitted candidate has obtained a positive evaluation in all the modules of the course.

#### *EVALUATION GRID*

A: It expresses itself in clear language full of appropriate terms. He knows the subject matter in depth and masters its concepts and definitions with confidence. Will be able to formulate summaries and produce autonomous elaborations on the subject matter: 30 laude

B: It expresses itself in clear language full of appropriate terms. Has a thorough knowledge of the subject matter and masters its concepts and definitions. He/she is often able to produce autonomous syntheses and elaborations on the subject matter: 30

C: He expresses himself in fairly clear and appropriate language. Knows the subject matter and masters its fundamental concepts and definitions. Upon solicitation, he/she is able to synthesize and elaborate on the subject matter: 27-29

D: He expresses himself in fairly clear and appropriate language. Knows the main aspects of the subject matter as well as some fundamental concepts and definitions. Upon solicitation, he/she is sometimes able to synthesize and/or rework the subject matter: 23-26

E: He expresses himself with an elementary language, not very appropriate to the object. He highlights numerous gaps in knowledge of the subject matter and has little command of the related concepts and definitions. Will not be able to produce independent summaries or elaborations on the subject matter: 18-22

## **9. program**

### ***Pharmacology***

#### *General pharmacology*

Introduction to pharmacology General definitions. Origin of drugs: natural, semi-synthetic, synthetic. Medicines and pharmaceutical forms. Pharmacokinetics: drug absorption, distribution, metabolism and elimination; pharmacokinetic parameters and their use. Pharmacodynamics: receptor and non-receptor mechanisms of action; receptors: receptor classification, signal transduction mechanisms, dose-response curves, potency and efficacy, agonism and antagonism. Definitions of toxic compound (or substance), toxin and poison. Toxic and lethal doses. 50% lethal dose (LD50). Definition of dose: exposure, absorbed, administered, total. Side effects of drugs. Effects. Toxic effects

#### *Special Pharmacology*

Drugs that act on the central nervous system: sedative-hypnotic; anxiolytics; medications for the treatment of mood disorders; drugs for the treatment of Parkinson's disease. Drugs of the

autonomic nervous system. Drugs that act on the cardiovascular system: antihypertensives; vasodilators and treatment of angina pectoris; drugs used in heart failure; diuretics; thrombolytics, anticoagulants and antiplatelets; HMG-CoA reductase inhibitors (statins). Endocrine pharmacology: insulin; antidiabetic drugs; diabetes complications. Chemotherapy drugs: antimicrobials (definitions, generalities and selection criteria; antibiotic classifications; prophylaxis); antineoplastic chemotherapy. Anti-inflammatory, analgesic and antipyretic drugs: aspirin; paracetamol; NSAIDs; glucocorticoids. Drugs used in other systems.

### ***Clinical Nursing***

Nursing care for patients undergoing diagnostic investigations:

Premise, role of the nurse, patient preparation, assistance during and after diagnostic examination

Electrocardiogram: definition of electrocardiogram, graph paper, leads peripheral, precordial, bipolar, unipolar, analyze the ECG, perform an ECG (material and technique) stress test: what are indications, patient preparation, nursing skills, risks and complications.

Radiological examinations: definition, nursing skills during the following diagnostic examinations: chest X-ray, barium examinations, barium enema, digestive X-ray, computed tomography (CT), ultrasound examinations: ultrasound, Doppler ultrasound, MRI, angiography, radiation protection standards, contrast media, Notes on interventional radiology Esami endoscopici: Esofagogastroduodenoscopia, rettosigmoidoscopia, colangiopancreoscopia retrograda CPRE, broncoscopia, cistoscopia.

Aspiration procedures: thoracentesis, paracentesis, biopsy, lumbar puncture, nursing skills before, during, and after the exam.

Medication administration

Nursing liability and legal aspects related to administration, clinical risk from drugs, types of errors in the use of drugs. Classification of drugs. How to take it.

Routes of administration (peripheral and central intravenous), storage and preparation of drugs. Pharmaceutical forms. Calculation and dosage of drugs to be administered

Intravenous therapy: Purpose, infusion rate. Peripheral intravenous therapy. Central intravenous therapy. Chemotherapy. Parenteral nutrition

### ***Diagnostica per Immagini***

Outline of the history and evolution of diagnostic imaging. Organization of the radiology service. Ionizing radiation: physical basis: genesis and properties of X-rays. Radiation units of measurement. Elements of radiobiology and radio-biological interaction Elements and standards of radiation protection; the radio exposure of the user and the operator for radio personnel exposed according to current regulations.

Traditional radiology: The X-ray tube. The formation of the radiographic image. Digital evolution. Notes on anatomy and main normal and pathological pictures (thorax, abdomen, skeleton); baryta and organoiodinated contrast agents. Indications and main normal and pathological pictures in contrastographic radiology (digestive system, urinary system).

Computed tomography: principles of image formation and technological evolution; Presentation of

axial sections and anatomy elements.

Nuclear magnetic resonance: principles of image formation; elements of anatomy; directions; relative and absolute contraindications; hints at advanced applications (e.g. cardioMRI, multiparametric study of organs, etc ...). Hints of protectionism on magnetic fields and radio frequencies.

Ultrasound: principles of image formation; indications for study; preparation of the patient for abdominal echotomographic examination.

Notions of vascular and interventional radiology: digital subtraction; vascular applications (PTA, stents, endoprotheses, embolizations); extravascular applications (biliary tract, radiofrequencies, chemoembolizations).

Contrast media: biochemical structure; classification; directions; Contraindications; preparation of the allergic patient and with renal hypofunction; notions of first aid in case of allergic reactions.

### ***Clinical Psychology***

The aim of the Clinical Psychology module is to introduce the student to clinical psychology in its applied aspects in the world of work (health area, helping professions, hospital contexts).

The module will take into particular consideration the topics concerning the nosography of psychopathologies recognized in the academic field and by the international literature, elements of dynamic psychology, panorama of interventions in clinical psychology.

Further space will be dedicated to the themes of interpersonal communication (fundamental elements of communication; feedback and active listening; strategies for effective communication; relationship strategies) and some dimensions of professional interest such as empathy, communication with the patient; psychometric tests.