

INTEGRATED COURSE: CRITICAL CARE NURSING

Year/semester: Third year/First semester

ECTS: 5

Course coordinator: Dr Roberta Monzani

INTEGRATED COURSE	MODULE	SSD	PROFESSORS	ECTS	HOURS
			Milan office		
<i>Critical Care Nursing</i>	<i>Internal medicine</i>	<i>MED/09</i>	<i>Visigalli Marilena</i>	<i>1</i>	<i>15</i>
	<i>General surgery</i>	<i>MED/18</i>	<i>Baticci Fabio</i>	<i>1</i>	<i>15</i>
	<i>Anaesthesiology</i>	<i>MED/41</i>	<i>Monzani Roberta*</i> <i>Visigalli Marilena</i>	<i>1</i>	<i>15</i>
	<i>Clinical and Paediatric general nursing sciences</i>	<i>MED/45</i>	<i>Rendiniello Valerio, Oldani</i>	<i>2</i>	<i>30</i>

COURSE OBJECTIVES: Students are expected to:

- be able to draw up specific care plans based on the assessment of the person's needs, classifying priorities for intervention in highly complex situations and using all the tools available
- be able to rapidly recognise clinical emergency situations and take the necessary first aid measures, based on their competencies, to ensure survival

TEACHING METHODS: Lectures and clinical cases

PREREQUISITES: passing the exam grants access to the practical placement exam

ASSESSMENT METHODS: The **on site exam** will be based on a multiple choice questionnaire composed of 4 parts (nursing sciences, anaesthesiology, surgery and internal medicine). To pass the written examination the student must answer correctly 60% of the questions. The student may have access to the oral examination to improve and/or confirm the grade. The final grade will be the average of the 4 parts. The **online exam** will be oral and based on a clinical case prepared by the student, which will be discussed through questions from each of the course representatives. Maximum time for each presentation 5', maximum time for the exam is 18'

MODULE: INTERNAL MEDICINE MED/09

SUGGESTED READING: Brunner-Suddart , Infermieristica medico-chirurgica vol.I e II

ADVANCED READING: material provided by the professor

OBJECTIVES:

- Recognizing and monitoring the critical patient
- Differential diagnosis and initial treatment of the critical patient with shock, renal and respiratory failure, intoxication, endocrine diseases
- Sepsis six
- Correct use of infusion therapy (crystalloids and colloids)
- Principles of non-invasive ventilation

CONTENT:

- Respiratory insufficiency: definition, principles, causes, techniques and non-invasive methods of respiratory support: asthma, COPD, ARDS, pulmonary embolism.
- Shock: pathophysiology, types of shock and management. Septic shock.
- Intoxications: heavy metals, fungi, medication and substances of abuse.
- Endocrine emergencies: diabetes and ketoacidosis, hyperosmolar hyperglycaemic state, hypoglycaemia.
- Pituitary apoplexy.
- Hyperthyroidism.
- Adrenal insufficiency.

MODULE: GENERAL SURGERY MED/18

SUGGESTED READING: Brunner-Suddart , Infermieristica medico-chirurgica vol.I e II

ADVANCED READING: material provided by the professor

OBJECTIVES:

Recognise the main clinical signs and symptoms, diagnostic workflow and risks/complications of patients with problems of surgical interest in the emergency situation. Describe the principles and techniques of surgery.

Indicate the organisational and care characteristics in the emergency system

CONTENTS:

1- Trauma:

- a. primary assessment
- b. thermal injuries
- c. trauma in women
- d. abdominopelvic trauma, acute abdomen and peritonitis
- e. head injury
- f. spinal cord injury
- g. musculoskeletal trauma
- h. trauma in the elderly
- i. Paediatric trauma
- j. thoracic trauma
- k. shock in trauma

2- Airways and ventilation

3- Emergency vascular surgery

4- Gastrointestinal bleeding

5- Terrorism and bioterrorism

6- Carbon monoxide poisoning

MODULE: ANAESTHESIOLOGY MED/41

SUGGESTED READING:

- Evidence-Based Nursing, 1st Edition Alba DiCenso & Gordon Guyatt & Donna Ciliska Elsevier
- Evidence-based Practice in Nursing Peter Ellis Learning Matters Ltd

ADVANCED READING:

OBJECTIVES:

Score for detecting deterioration of the patient's general clinical condition, measurement and monitoring of pain. Ability to conduct a handover to an emergency physician via telephone call or in person, priority of intervention.

CONTENT:

- Complications in anaesthesia
- Perioperative normothermia in emergency/urgency
- Organ donor
- EWS score
- Urgency in NORA (Non Operating Room Anaesthesia)
- Non-obstetric emergencies in pregnant patients
- Anaesthesia for paediatric emergencies
- Water-electrolyte imbalance and acid-base balance
- Criteria for emergency dialysis
- Pain in emergencies
- NRS score and treatment rationale
- Comas
- Main acute intoxications

LEARNING ACTIVITIES:

Streaming and in-person lectures divided between 3 lecturers according to the specificity and expertise of the topics covered (Dr Brusa resuscitator, Dr Sacchi Acute Pain Service and perioperative, Dr Monzani anaesthesia)

MODULE: CLINICAL AND PAEDIATRIC GENERAL NURSING SCIENCES MED/45

SUGGESTED REFERENCES: Andrea Gentili *Il paziente critico. Clinica e assistenza infermieristica in anestesia e rianimazione*, CEA, 1995

ADVANCED READING:

- Luca Benci, *Aspetti giuridici della professione infermieristica*, McGraw-Hill, Milano, 2011.
- GianDomenicoGiustieBenettonMaria, *Guida al monitoraggio in Area Critica*, Maggioli Editore
- Paola Alghisi, Marinella Conca, Enrico Frisone, *L'infermiere in Area Critica*, casa Ed. Carocci Faber, Milano 2004
- Giorgia Canizzaro, Roberta Casali, *Psicologia dell'emergenza sanitaria 118*, Franco Angeli edizioni 2011
- Antonetti, Alvaro, Scampati, Mostarda, Onorati, Potenza, *Il triage infermieristico, imass disaster e le operazioni di peacekeeping*, Editore Universitaria 2017

OBJECTIVES:

The student will know the methods of nursing care management, from data collection to evaluation of actions and outcome, for the person presenting bio-physiological, pathophysiological, psychological and socio-cultural signs and symptoms related to critical medical conditions. The student will be able to recognise clinical emergency situations, which require first aid actions to ensure survival, and adequate and effective nursing care. The student will be able to acquire knowledge on how to manage clinical emergency situations and to develop specific care plans in situations of high complexity of care in first aid and intensive care. The student will be able to know the main methods of intervention in disaster situations.

CONTENT:

1- Concept of critical area:

- The time factor in the critical area
- Emergency and Urgency
- The emergency/urgency setting
- Assessment of and care planning for the critically ill person
- Semeiotics of critical state
- Semeiotics of clinical emergency

2- The pre-hospital emergency nurse:

- The emergency/urgency system
- The AREU (Azienda Regionale Emergenza Urgenza/ Regional Emergency Urgency Agency) organisational system
- AREU in figures
- Macro-areas outside the hospital

- The SOREUs (Sale Operative Regionali Emergenza Urgenza / Regional Emergency Operations Rooms)
- The AATs (Articolazioni Aziendali Regionali / Regional Units)
- Helicopter rescue
- Liability during outside-hospital rescue
- The nurse in the ambulance

3- Care of the polytrauma patient

- Trauma dynamics
- Primary survey
- Trauma management in the emergency room
- The Trauma Team
- Using the Trauma Transfer Mattress
- Using the Pelvic Binder (T-pod)
- Vascular access
- Road safety video

4- The Maxi-Emergency

- Maxi-emergency definition
- Definition of catastrophe
- Classification of disasters
- Stages in the rescue chain in a major emergency
- Triage in emergencies
- The AMP (Advanced Medical Post)
- Professional figures in the Maxi-emergency
- Managing a massive influx of injured people in Humanitas

5- Triage

- Definition of Triage
- Historical evolution of Triage
- Hospital Triage in Italy
- Objectives and methodology of Triage
- Types of Triage
- Triage in Humanitas
- Characteristics of the triage nurse

6- Monitoring the critical patient in intensive care

- Outline of the structure and organisation of the Intensive Care Unit
- Respiratory monitoring parameters and instruments
- Cardiovascular monitoring parameters and instruments
- Neurological monitoring parameters and instruments
- Parameters and instruments for monitoring diuresis and body temperature

7- Endotracheal intubation

Indications, objectives and complications of intubation

- Materials needed, types of tubes and nursing interventions to assist with intubation
- Overview on difficult intubation
- Nursing care of the intubated person and the complications that can occur
- Nursing care and complications during extubation
- Overview on certain supraglottic devices: laryngeal mask and fastrach

8- Tracheostomy

- difference between tracheostomy and tracheotomy, the indications, objectives and location of a tracheostomy procedure.
- Overview of techniques to perform a tracheostomy
- types of tracheostomy cannula and outer cannula
- nursing care for the person wearing a tracheostomy cannula
- complications that can occur in a patient wearing a tracheostomy cannula
- indications, objectives, materials required, techniques and complications of pulmonary aspiration in the patient with tracheostomy cannula

9- Nursing care of the ventilated patient

- definition of the main terms related to ventilations
- the main types of ventilation
- Weaning from the ventilator
- nursing care for the ventilated person
- complications that may arise in the mechanically ventilated person
- non-invasive ventilation and the devices used
- Overview VAPs
- interventions to prevent VAPs
- Overview of the approach to read blood gas analysis

10- The patient with cardiovascular problems

- Notes on shocks and types of shocks
- parameters and instruments for monitoring pulmonary blood pressure, mixed venous saturation and determining cardiac output
- main cardiovascular medication used in the critical area
- calculations for the dosage of cardiovascular medication

11- Nursing care of the neurosurgical patient

- Monroe-Kellie's law and the normal physiological maintenance of intracranial pressure and the problems that can arise due to a lack of cerebral compensation
- concept of ICP, normal reference values, monitoring instruments and signs of increase
- neurological monitoring
- indications, locations, complications that may arise in the placement of ICP monitoring devices
- therapeutic and care interventions and pathological conditions affecting ICP
- About SvJO2

12- Nursing care for organ donors

- Overview on the diagnosis of brain death
- tests to assess brainstem reflexes
- main organ alterations from brain death
- main interventions to be implemented for the haemodynamic, respiratory, hydroelectrolytic, metabolic and thermal control of the organ donor