BSc in Nursing

INTEGRATED COURSE TITLE: INFORMATION TECHNOLOGY/ SEMINAR ACTIVITY
NUMBER OF ECTS CREDITS: 1
CODE: MEDS-24/C
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PREREQUISITES

There are no specific prerequisites required.

LEARNING OBJECTIVES

The objective of Professional Laboratory is to provide students with the necessary skills to safely and effectively administer medications. This includes a thorough understanding of nursing responsibilities related to medication administration, including safety procedures and ethical professional practices. The Laboratory also aims to provide students with detailed knowledge of the various routes of medication administration and available pharmaceutical forms, as well as to reinforce their mathematical skills through math reviews and the application of mathematical concepts to nursing practice, especially in the context of pharmacological dosage calculations.

In addiction, the aim of the seminar activity is to provide students with a detailed understanding of the anatomy and physiology of the cardiac system, as well as the practical skills necessary to perform and accurately interpret an electrocardiogram (ECG) in a nursing context. The course aims to provide an in-depth understanding of the principles of electrocardiography and techniques for accurately recording an ECG. Students will also learn to read and interpret the ECG from a nursing perspective, including identifying normal variations and any abnormalities.

Also, The seminar activity also aims to provide comprehensive knowledge about adult and pediatric pain by analyzing the most appropriate techniques and tools to manage it effectively.

LEARNING OUTCOMES

Knowledge and Understanding

At the end of the seminar activity, the student will be able to:

- Understand the role and responsibilities of the nurse in medication administration, including the legal, ethical, and professional requirements involved.

- Have a thorough knowledge of the various routes of medication administration (oral, parenteral, topical, etc.) and available pharmaceutical forms (tablets, capsules, injectable solutions, etc.).
- Understand the fundamental mathematical concepts necessary to perform pharmacological dosage calculations accurately and safely.
- Have a clear understanding of the concepts of solutions and dilutions and their practical applications in the preparation and administration of medications.
- Be able to correctly use various calculation methods to determine accurate pharmacological dosages, considering patient characteristics and medical prescriptions.
- Have a detailed knowledge of the different types of medications administered via enteral and parenteral routes, as well as the procedures and precautions necessary for the safe administration of such medications.
- Understand the specific considerations and methodologies involved in calculating medication doses in pediatric patients, taking into account differences in body weight and development.
- Have a thorough understanding of the anatomical structure and physiological functions of the cardiac system, including different types of cardiac tissues, heart chambers, heart valves, and the electrical conduction system.
- Have a clear understanding of the fundamental principles of electrocardiography, including the process of generating and recording cardiac electrical activity through electrodes.
- Know the correct techniques for performing an electrocardiogram recording, including electrode placement on the patient's body and technical parameters for accurate recording.
- Be able to interpret an electrocardiogram from a nursing perspective, recognizing normal tracings and identifying any abnormalities, including signs of ischemia, infarction, arrhythmias, and other cardiac conditions.
- Have detailed knowledge of different types of cardiac arrhythmias, including causes, symptoms, clinical implications, as well as monitoring and nursing management strategies.
- Understand the role of the nurse in monitoring and surveillance of patients with cardiac arrhythmias, including those undergoing cardiac surgery, and be able to apply best practices to ensure proper nursing care.
- Understand the characteristics of pain in the adult and pediatric setting and how to manage it.
- Understand the nurse's role in monitoring and surveillance of patients with acute or chronic do-lore and know how to implement best nursing practices for management
- Understand techniques to detect pain in the adult and pediatric patient using the most appropriate measurement scales based on the context and patient characteristics.

Applying knowledge and understanding

At the end of the seminar activity, the student will be able to:

- Apply the acquired knowledge of ECG recording techniques to correctly position electrodes on the patient's body, ensuring accurate and reliable recording of cardiac electrical activity.
- Use understanding of electrocardiography principles to accurately interpret ECG tracings, recognizing signs of normality, abnormalities, and cardiac arrhythmias, and applying appropriate nursing management strategies.
- Apply knowledge of cardiac arrhythmias and nursing monitoring procedures to perform regular checks on patients, promptly detecting any changes in heart rhythm and taking necessary corrective actions.

- Use knowledge of emergency management procedures and first aid to intervene quickly in potentially dangerous cardiac arrhythmia situations, ensuring an effective and appropriate response in crisis situations.
- Collaborate with other healthcare team members, including physicians, specialized nurses, and laboratory technicians, to ensure comprehensive and coordinated care for patients with cardiac conditions, integrating their own skills within the overall care plan.
- Use their knowledge and skills to educate and inform patients and their families about cardiac arrhythmias, associated risk factors, and recommended preventive and therapeutic measures, thus promoting active involvement in managing their cardiac health.
- Apply the acquired knowledge on nursing responsibilities and standard procedures to ensure safe and accurate medication administration, using the correct routes of administration and pharmaceutical forms.
- Utilize the learned mathematical concepts to perform accurate calculations of pharmacological dosages, considering physician's instructions, patient characteristics, and any necessary dilutions.
- Apply the understanding of solutions and dilutions to properly prepare pharmaceutical solutions according to prescribed specifications, ensuring correct and safe medication concentrations.
- Use the acquired knowledge of pediatric dosage calculations to determine appropriate doses in pediatric patients, adjusting doses based on body weight and individual needs of the child.
- Apply the understanding of medications and their routes of administration to recognize and manage any complications during medication administration, taking necessary corrective measures in case of adverse reactions or compatibility issues.
- Collaborate with other healthcare team members, including physicians and pharmacists, to ensure proper medication administration, exchanging relevant information and ensuring integrated and coordinated management of pharmacological treatment.
- Manage pain in the adult and pediatric setting with the various methods and tools available
- Use apporpriate pain detection scales in abse to the context, age, and characteristics of the patient.
- Implement the correct nursing actions to control and manage pain in the adult and pediatric setting

Communication skills

The student must orally present the core topics in an organized and coherent manner, using a specific, appropriate scientific language that aligns with the discussion topic.

Making judgements

At the end of the seminar activity, the student should be able to:

- Independently assess the patient's condition, including signs and symptoms of cardiac arrhythmias, and determine the need for additional monitoring or immediate nursing interventions based on the collected information.
- Utilize judgment autonomy to establish priorities in nursing care, determining which patients require closer monitoring or more urgent interventions based on the severity of arrhythmias and the patient's health risk.

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- Be capable of making rapid and effective decisions in emergency situations, such as ventricular arrhythmias or ventricular fibrillation, using their experience and expertise to establish an immediate action plan and save lives.
- Use judgment autonomy to adapt nursing therapies based on the patient's response to treatment, closely monitoring ECG results and making adjustments to pharmacological therapies or monitoring procedures as needed.
- Collaborate with other members of the healthcare team, such as physicians and specialists, to discuss treatment options and establish an integrated care plan for patients with cardiac arrhythmias, making informed and coordinated decisions to optimize care.
- Utilize judgment autonomy to educate patients about their cardiac conditions, associated risk factors, and recommended preventive and therapeutic measures, helping them understand and manage their cardiac health effectively.
- Utilize judgment autonomy to assess the patient's condition before administering medications, considering factors such as medical history, age, body weight, and current patient conditions.
- Be able to independently determine priorities in drug administration based on the urgency of patient needs, giving priority to critical medications or those requiring timely administration.
- Utilize judgment autonomy to manage any discrepancies or inconsistencies in medical prescriptions or dosage calculations, consulting physicians or pharmacists when necessary to obtain clarification or corrections.
- Be capable of autonomously adapting pharmacological therapies based on patient response and monitoring results, adjusting dosages or modifying administration methods to ensure optimal and personalized treatment.
- Utilize judgment autonomy to identify potential risks or complications associated with drug administration and adopt appropriate preventive measures to mitigate such risks, such as monitoring vital signs or blood levels.
- Utilize judgment autonomy to educate and inform the patient and their family about the administered medications, explaining purposes, possible side effects, and precautions to follow, thereby promoting active and informed patient participation in their own care.
- Be able to independently recognize and assess pain in the adult and child/infant and know how to manage it effectively
- Use autonomy of judgment to monitor pain in the adult and pediatric setting sce-ching the most appropriate tools to assess it and the nursing actions to manage it
- Use independent judgment to explain to the patient the meaning of pain and techniques to be able to reduce it

Learning skills

The student will have acquired appropriate learning skills and methods to deepen and improve their skills in the field of electrocardiography, including through consulting scientific literature. Additionally, the student will adopt a professional behavior: active attitude, continuous commitment, reflective approach oriented towards self-learning, acceptance of feedback for improvement in achieving the set objectives.

COURSE SYLLABUS

- Anatomy and physiology of the cardiovascular system
- Electrocardiography
- Electrocardiogram: techniques for accurate recording
- Nursing reading and interpretation of an ECG
- Arrhythmias
- Certain arrhythmic conditions associated with cardiac surgery - nursing monitoring and surveillance.
- Nursing responsibility in medication administration
- Routes of drug administration and pharmaceutical forms
- Mathematics review
- Solutions and dilutions
- Calculation methods for pharmacological dosages
- Enteral and parenteral drug administration: dosage calculations and exercises
- Dosage calculation in pediatric patients
- Pain in the adult and pediatric setting
- Pain detection modalities and measurement scales
- Pain management in the adult and child

COURSE STRUCTURE

The Bachelor's Degree in Nursing provides a total of 2 university educational credits (CFUs) to be dedicated to internship activities in the first year of the course. Each CFU corresponds to 30 hours, therefore the total internship hours in the first year of the course amount to 60 hours.

Attendance at seminar activities is mandatory for all students enrolled in the Bachelor's Degree program.

ASSESSMENT CRITERIA

The Seminar Activity exam consists of an oral examination, the assessment of which constitutes an integral part of the course evaluation. All content outlined in the teaching programs will be evaluated. The assessment will focus on the student's knowledge and understanding, their ability to apply knowledge and understanding, their judgment autonomy, and their communication skills, which will respectively weigh 30%, 30%, 30%, and 10% towards the final score. The final grade will be assigned collectively by the Committee.

The evaluation criteria will include: acquired knowledge, judgment autonomy, communication skills, and learning abilities. The final oral exam will be assessed based on the following criteria:

fail	The candidate possesses an inadequate knowledge of the topic, makes significant errors in applying theoretical concepts, and shows weak presentation skills.
pass	The candidate possesses an adequate knowledge of the topic, good presentation skills and ability to apply theoretical concepts.

OPTIONAL ACTIVITIES

Students will have the opportunity to engage in theoretical/practical exercises and participate in seminars or laboratory activities.

RECOMMENDED READING

- Material provided by the professor.
- Ledonne, G., Tolomeo, S. (2014). Calcoli e dosaggi farmacologici. La responsabilità dell'infermiere. Casa Editrice Ambrosiana.

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