

Syllabus

Course Number: PTMA 1000

Course Name: Pharmacology Therapeutics and Medication Administration

Credit Value: 6

Prerequisite/Corequisite: Referral from the CLPNA to meet licensure requirements or a current active or associate LPN registration

Description

Pharmacology Therapeutics and Medication Administration examines the physiological effects of drugs on clients, including therapeutic effects, side effects, adverse effects, and drug interactions. In this course, you will study common drug classifications and selected medications, including herbal preparations within each classification. You will also explore policies and best-evidence practices related to safe medication administration. You will learn to do medication calculations correctly and your medication administration skills will be evaluated.

Rationale

Pharmacology Therapeutics and Medication Administration provides the scientific and applied knowledge base required for safe medication administration.

General Learning Outcomes

Upon completion of this course, you will be able to meet or exceed the following outcomes:

- Examine relevant government legislation and CLPNA competencies related to the administration of medication.
- Identify best-evidence practices in safe medication preparation, administration, and documentation.
- Examine medication measurements using various systems of measurement (amount/quantity).
- Calculate medication amounts correctly.

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- Research medications using common pharmacological references and resources for safe administration of medications.
- Describe the pharmacotherapeutic effects of various drugs within each classification.
- Determine common medications within each classification.
- Examine selected herbal medications, and their effects, side effects, and interactions with other drugs.
- Examine nursing implications and responsibilities related to medication administration.
- Demonstrate principles of safe administration of medications and client teaching during guided lab practice and supervised clinical practice.

Learning Units

This course consists of the following units:

- Unit 1: Foundations of Clinical Pharmacology
 - Topic 1.1: General Principles of Pharmacology
 - Topic 1.2: Federal and Provincial Legislation and Standards
 - Topic 1.3: Best Evidence in Safe Medication Administration
 - Topic 1.4: Using the Nursing Process to Ensure Safe Medication Administration
- Unit 2: Anti-Infective Medications
 - Topic 2.1: Antibiotics
 - Topic 2.2: Antituberculars
 - Topic 2.3: Antivirals
 - Topic 2.4: Antifungals
- Unit 3: Analgesic Medications
 - Topic 3.1: Non-Opioids/Non-Narcotics
 - Topic 3.2: Opioids/Narcotics
 - Topic 3.3: Opioid/Narcotic Antagonists
- Unit 4: Neuromuscular Medications
 - Topic 4.1: Anesthetics
 - Topic 4.2: Antianxiety Medications
 - Topic 4.3: Sedatives and Hypnotics

- Topic 4.4: Antidepressants
- Topic 4.5: Central Nervous System (CNS) Stimulants
- Topic 4.6: Antipsychotic Medications
- Topic 4.7: Adrenergic and Adrenergic Blocking Medications
- Topic 4.8: Cholinergic and Cholinergic Blocking Medications
- Topic 4.9: Anticonvulsants
- Topic 4.10: Antiparkinsonism Medications
- Topic 4.11: Cholinesterase Inhibitors
- Topic 4.12: Musculoskeletal Medications
- Unit 5: Respiratory Medications
 - Topic 5.1: Antitussives, Mucolytics, and Expectorants
 - Topic 5.2: Antihistamines and Decongestants
 - Topic 5.3: Bronchodilators and Antiasthma Medications
- Unit 6: Cardiovascular Medications
 - Topic 6.1: Cardiotonics
 - Topic 6.2: Antiarrhythmic Medications
 - Topic 6.3: Antianginal and Peripheral Vasodilating Medications
 - Topic 6.4: Antihypertensives
 - Topic 6.5: Antihyperlipidemics
- Unit 7: Hematologic Medications
 - Topic 7.1: Anticoagulant and Thrombolytic Medications
 - Topic 7.2: Treatment of Anemia
- Unit 8: Gastrointestinal and Urinary Medications
 - Topic 8.1: Diuretics
 - Topic 8.2: Urinary Tract Medications
 - Topic 8.3: Gastrointestinal Medications
- Unit 9: Endocrine Medications
 - Topic 9.1: Antidiabetic Medications
 - Topic 9.2: Pituitary and Adrenocortical Hormones
 - Topic 9.3: Thyroid and Antithyroid Medications
 - Topic 9.4: Male and Female Hormones
 - Topic 9.5: Uterine Medications
- Unit 10: Immune System Medications
 - Topic 10.1: Immunologic Agents

- Topic 10.2: Antineoplastic Agents
- Unit 11: Fluids and Electrolytes
- Unit 12: Herbal Medications
- Unit 13: Medication Calculations
- Unit 14: Applying Best-Evidence Practices to Medication Administration
 - Topic 14.1: Medication Preparation
 - Topic 14.2: Medication Administration

Required Textbooks and Material

- Ford, Susan and Sally Roach. *Roach's Introductory Clinical Pharmacology*. 10th ed. Lippincott Williams & Wilkins, 2013. ISBN-13: 9781451186710.
 - Includes a CD with animations and practice medication calculation questions. Feedback is immediate
- Ford, Susan and Sally Roach. *Study Guide to Accompany Roach's Introductory Clinical Pharmacology*. 10th ed. Lippincott Williams & Wilkins, 2013. ISBN-13: 9781451190397.
 - Accompanies the Ford textbook with answers to practice activities located at the back of the guide.
- Predham, Brenda and Susan Buchholz. *Henke's Med-Math*. 1st Canadian ed. Lippincott Williams & Wilkins, 2009. ISBN-13: 9780781799867.
 - Explains the mathematical computations necessary while also providing additional information required for administering medications safely.
- Karch, Amy. *2014 Lippincott's Nursing Drug Guide*. 2014 Canadian ed. Lippincott Williams & Wilkins, 2014. ISBN-13: 9781469820743.
 - Presents medications by common classifications and addresses herbal preparations.
- Lynn, Pamela. *Lippincott's Photo Atlas of Medication Administration*. 4th ed. Lippincott Williams & Wilkins, 2010. ISBN-13: 9781451112481.
 - Provides a visual guide to medication administration techniques.
- NorQuest College. *Practical Nurse Program: Applied Pharmacology and Medication Administration DVD's (1 and 2)*. NorQuest College Bookstore.
- NorQuest College. *PTMA 1000 Skills Kit*. NorQuest College Bookstore.

Required Internet Readings

- Amulya, J. (2003). What is reflective practice? Retrieved January 7, 2010 from the website of the Center for Reflective Community Practice at:
<http://www.itslifebutnotasweknowit.org.uk/>.
- Canadian Patient Safety Institute. (2008). Ask. Talk. Listen. Tips for patients and families. Retrieved March 2, 2010 from <http://patientsafetyinstitute.ca/>.
- Canadian Patient Safety Institute. (2010). Safety competencies – enhancing patient safety across the health professions. Retrieved January 7, 2010 from <http://www.patientsafetyinstitute.ca/>.
- College of Licensed Practical Nurses of Alberta & Alberta Health and Wellness. *Competency Profile for Licensed Practical Nurses of Alberta*. <http://www.clpna.com/>.
 - This profile includes the knowledge, skills, behaviours, and attitudes required of licensed practical nurses in Alberta. This publication will be referred to as the LPN Competency Profile in the Learner Guide.
- Government of Alberta. (2003, March 31). Health professions act: Licensed practical nurses profession regulation. Retrieved January 8, 2010 from <http://www.health.alberta.ca/>.
- Hartford Geriatric Nursing Initiatives (2009). Best Practices. Retrieved January 8, 2010 from <http://www.nursing.uiowa.edu/>.
- Health Canada. (n.d.). About natural health product regulation in Canada. Retrieved January 8, 2010 from <http://www.hc-sc.gc.ca/>.
- NorQuest College. *PTMA 1000 Companion Guide*. Moodle.
 - The *Companion Guides and Answer Keys* on Moodle provides helpful learning activities that allow you to apply and assess your knowledge of course content.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Appropriate anticoagulant use-a patient safety priority. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Communication of medication orders by telephone-writing it right. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.

- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Dangerous abbreviations: u can make a difference. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Fentanyl patch linked to another death in Canada. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Importance of patient and/or family involvement in patient safety. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Inadvertent administration of oral solutions by injection. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Insulin errors. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Look-alike/sound-alike drug names: can we do better in Canada? Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Narcotic safeguards-the challenge continues. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Safeguard against errors with long-acting oral narcotics. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). The patient's role in safe medication. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). To promote understanding, assume every patient has a health literacy problem. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Top five drugs reported as causing harm through medication error in pediatrics. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.

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- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Unexpected hypoglycaemia: consider medication error in the differential diagnosis. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Institute for Safe Medication Practices-Canada. (2000-2010). Your call to make a difference. Retrieved March 2, 2010 from <http://www.ismp-canada.org/>.
- Website of the Registered Nurses' Association of Ontario. (n.d.). Establishing therapeutic relationships. Retrieved January 8, 2010 from <http://www.rnao.org/>.
- Website of the World Health Organization (2007). Clean hands are safer hands. Retrieved March 2, 2010 from <http://www.who.int>.
- Website of the World Health Organization (2007). Launch of the nine patient safety solutions. Retrieved March 2, 2010 from <http://www.who.int>.

Additional Notes

Some course readings are included as PDFs attached to the Unit. These are reproduced under the Fair Dealing user right of the Copyright Act, RSC 1985, c. C-42, s.29. Citations are attached to these works.

Assessments

To receive credit in PTMA 1000, students must:

- Achieve an average grade of C+ (70%) or greater on
 - Assignment 1 – 30% (100 Points)
 - Apply knowledge of pharmacology to a case study.
 - Post Unit 6 Midterm Exam – 30% (100 Points)
 - Demonstrate your knowledge of course content.
 - Final Exam: Part B Component - 40% (100 Points)
 - Consists of multiple-choice questions designed to evaluate knowledge of course content.
- Achieve Pass grades on
 - Final Exam: Part A Component (Pass grade \geq 90%)
 - Consists of multiple choice and short- answer questions.
 - Practical Exam – Course Pass/Fail
 - Skills Assessment Part A Component

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- ❖ Demonstration of medication administration skills in a lab setting
- Skills Assessment Part B Component
 - ❖ Demonstration of medication administration skills in a clinical setting