Pharmacology Course Calendar

Pharmacology Course - Self Directed Learning at Your Own Pace

This online self-directed course will provide a basic overview of the concepts of pharmacology. Students gain an understanding of drug classifications, administration and clinical implications. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of pharmacology.

Course Highlights:

100% online and self-paced
No scheduled meeting times
Includes 8 tests - 50 multiple choice questions with a 2 hour time limit

Test 1 - Modules 1,2,3,& 4
Test 2 - Modules 5, 6 & 7
Test 3 - Modules 8, 9 & 10
Test 4 - Modules 11, 12 & 13
Test 5 - Modules 14, 15 & 16
Test 6 - Modules 17, 18, 19 & 20
Test 7 - Modules 21, 22, 23, 24 & 25
Test 8 - Module 26 - Medical Math

Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. Define key pharmacological terminology related to drug classifications, actions, and therapeutic uses.
2. Differentiate between generic, trade, chemical, and official drug names.
3. Describe the sources, classifications, and dosage forms of medications.
4. Explain the principles of pharmacokinetics and pharmacodynamics.
5. Identify factors that influence medication absorption, distribution, metabolism, and excretion
6. Apply the principles of safe medication administration, including the rights of medication administration.
7. Interpret medication orders and prescriptions accurately.
8. Perform dosage calculations using fractions, decimals, ratios, proportions, percentages, and dimensional analysis.
9. Convert between metric, household, and apothecary systems of measurement.
10. Calculate medication dosages, intravenous rates, and pediatric dosages safely and accurately.
11. Describe federal and provincial regulations governing medication use and distribution.
12. Differentiate between controlled substance schedules and drug classifications.
13. Identify major drug reference resources and standards used in clinical practice.
14. Explain the physiological roles of vitamins, minerals, antioxidants, and essential fatty acids.
15. Identify signs, symptoms, and consequences of vitamin and mineral deficiencies.
16. Recognize potential toxicities associated with excessive vitamin and mineral intake.
17. Discuss the relationship between nutrition and health promotion, disease prevention, and healing.
18. Differentiate between antibacterial, antiviral, antifungal, and antiparasitic medications.
19. Compare broad-spectrum and narrow-spectrum antimicrobial agents.
20. Describe mechanisms of action, indications, contraindications, and adverse effects of major anti-infective drug classes.

21. Explain the development and prevention of antimicrobial resistance.
22. Identify patient teaching requirements related to anti-infective therapy.
23. Describe the immune response involved in allergic reactions.
24. Recognize signs and symptoms of allergic reactions and anaphylaxis.
25. Compare sedating and nonsedating antihistamines.
26. Explain pharmacologic and nonpharmacologic management of allergic conditions.
27. Describe pharmacologic treatments used for common skin and mucous membrane disorders.
28. Explain the therapeutic uses of medications affecting the respiratory system, including bronchodilators, expectorants, and antitussives.
29. Discuss the pharmacologic management of cardiovascular disorders, including hypertension, heart failure, arrhythmias, and thromboembolic conditions.
30. Identify adverse effects, contraindications, and nursing considerations associated with cardiovascular medications.
31. Compare medications used to treat pain, anxiety, depression, sleep disorders, epilepsy, Parkinson disease, and attention deficit disorders.
32. Differentiate between opioid and non-opioid analgesics.
33. Recognize signs and symptoms of medication toxicity, overdose, and withdrawal.
34. Explain the mechanisms of action and safety considerations associated with CNS-active medications.
35. Compare sympathetic and parasympathetic nervous system functions.
36. Differentiate between cholinergic, anticholinergic, adrenergic, and antiadrenergic medications.
37. Identify therapeutic applications and adverse effects of autonomic nervous system medications.
38. Describe pharmacologic treatments for gastrointestinal disorders, including acid-related disorders, nausea, constipation, and diarrhea.
39. Explain the physiological functions of endocrine glands and hormones.
40. Compare medications used to treat thyroid disorders, adrenal disorders, diabetes mellitus, and reproductive health conditions.
41. Identify signs and symptoms of endocrine medication adverse effects and complications.
42. Explain the therapeutic uses and mechanisms of action of diuretics and urinary tract medications.
43. Compare potassium-wasting and potassium-sparing diuretics.
44. Discuss pharmacologic management of benign prostatic hypertrophy, urinary incontinence, and erectile dysfunction.
45. Describe medications used in women's health, including contraception, fertility treatment, menopause management, and osteoporosis prevention.
46. Differentiate between active and passive immunity.
47. Describe indications, contraindications, and adverse effects of immunizations and immune globulins.
48. Explain the therapeutic uses of immunosuppressants, biologics, monoclonal antibodies, and targeted therapies.
49. Discuss emerging applications of gene therapy and molecular medicine.
50. Describe age-related pharmacokinetic and pharmacodynamic changes in older adults.
51. Explain safe medication administration principles for pediatric patients.
52. Identify factors influencing medication adherence and adverse drug reactions in special populations.
53. Recognize risk factors associated with substance misuse and dependency.
54. Identify signs and symptoms of intoxication, overdose, tolerance, dependence, and withdrawal.
55. Discuss the pharmacologic management of substance use disorders and smoking cessation.
56. Identify commonly used herbal products and their therapeutic claims.

57. Explain potential interactions between herbal products and prescription medications.
58. Educate patients regarding the safe use of complementary and alternative therapies.
59. Differentiate between drug-drug, drug-food, drug-herb, and drug-condition interactions.
60. Recognize common causes and manifestations of drug toxicity.
61. Apply strategies to prevent medication errors, adverse drug events, and harmful interactions.
62. Promote safe medication use through patient education and evidence-informed clinical decision-making.

Course Topics:
There are 26 modules in this program and 8 tests. You must receive 50% on the test to progress to the next module. Students will be allowed 3 attempts to pass each test. It is in the best interest of the student if they try the test the first time without looking at their notes. The tests are not meant to be "open book".

Course Fee:
The cost of the course is $149.00 CAD payable on the OCHT e-store or by e-transfer.

International Students:
This course is self-directed and online so students from outside of Canada are also welcome to enrol.

Enrolment:
Students will be contacted after they have either applied at ocht.ca or requested information.

Certificate:
Upon successful completion of this course, the student will be issued a Certificate of Completion and an Official Transcript.

List of Modules in the Program

1. Introduction to Pharmacology
2. Drug Legislation and Drug Standards
3. Introduction to Drug Dosage
4. Administration of Medications
5. Vitamins, Minerals and General Nutrition
6. Antibiotics and Antifungal Antiviral and Antiparasitic Agents
7. Antihistamines
8. Drugs That Affect the Skin and Mucous Membranes
9. Drugs That Affect the Respiratory System
10. Drugs That Affect the Circulatory System
11. Drugs That Affect the Central Nervous System
12. Pain Medications
13. Tranquilizers and Antidepressants
14. Drugs That Affect the Autonomic Nervous System
15. Drugs That Affect the Digestive System
16. The Endocrine Glands and Hormones
17. Diuretics and Other Drugs that Affect the Urinary System
18. Immunizing Agents and Immunosuppressives
19. Molecular and Targeted Therapies
20. Drug Therapy in Women
21. Drug Therapy in Older Adults
22. Drug Therapy in Children
23. Substance Abuse
24. Herbal Therapies and Drug-Herb Interactions
25. Interactions
26. Medical Math