DEN6262 Principles of Pharmacology

Spring 2021

Course Description:
This course describes the basic principles of pharmacokinetics and pharmacodynamics, with an emphasis on dental applications. Several clinical correlations are also included.

I. General Information

Course Director:

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Course Credits: 2
Semester: Spring

Contributing Faculty

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II. Course Goals

The goal of this course is to provide foundation knowledge in the general principles of pharmacology. Specifically this course will explore

1) drug absorption, distribution, elimination, dose-response relationships, drug-receptor interactions,
2) the pharmacological basis of drugs they will be using in their dental practice,
3) adverse effects and other pharmacological actions of drugs your patients may be taking because of their other diseases,
4) interactions of commonly used drugs,

III. Course Overview

All material will be presented in lecture format. Student learning should be augmented by self-instruction from posted lectures and other posted material, textbook, and selected Internet sources.

IV. Course Outline

I. Principles of Pharmacology
   1. Pharmacodynamics: Mechanisms of drugs action
   2. Pharmacokinetics: Drug absorption, distribution & elimination
   3. Dose-response relationships

II. Pharmacology of Specific Drugs
   1. Introduction to Autonomic Nervous System
2. CNS drugs: Sedatives, Hypnotics
3. Local Anesthetics
4. General anesthetics
5. Opioids
6. Non-steroidal anti-inflammatory drugs
7. Adrenergic drugs
8. Cholinergic drugs
9. Antihypertensive drugs
10. Cardiac glycosides & anti-anginal drugs
11. Anti-arrhythmic drugs
12. Diuretics
13. Anticoagulant & thrombolytic drugs
14. Lipid lowering drugs
15. Drugs acting on respiratory system
16. Histamine antagonists & drugs acting on gastrointestinal tract
17. Antipychotics & Anti-Parkinson agents
18. Antidepressents & Anticonvulsants
19. Principles & mechanism of antibiotic therapy
20. Antibacterial drugs
21. Antifungal & Antivirals agents
22. Anticancer drugs
23. Corticosteroids
24. Drugs used in diabetes
25. Drugs used to treat thyroid diseases
26. Drugs used to treat osteoporosis

V. Course Material

1. Course Materials contain supplemental lecture information as well as an outline of the lecture. Lecture Presentation Materials are the lecturer’s powerpoint slides, posted in editable pdf format for note taking. Some lectures will only have lecture presentation material.


3. Supplementary material (if any) will be posted in Canvas

Dental Lib Guide: http://guides.uflib.ufl.edu/dental
VI. Course Objectives

The learning objectives listed below are tools to guide and assess your learning. In addition, please refer to additional learning objectives for each lecture in the lecture outline in the course pack.

1. Define the classification and nomenclature of drugs and explain the process of drug development.

2. Describe and illustrate the relationships between drug concentration (dose) and response and use the relationship to predict drug-receptor interactions.

3. Classify the mechanisms of drug biotransformation and excretion.

4. Define and apply the principles of pharmacokinetics in terms of drug absorption, distribution and elimination.

5. Recall and describe the physiological effects, mechanism of action, uses, major limitations and adverse effects and interactions of prototypical drugs for the following systems/classes:
   a. Analgesic-antipyretic and anti-inflammatory
   b. Autocoids
   c. Autonomic and neuromuscular
   d. Cardiovascular
   e. Central nervous system
   f. Chemotherapeutic
   g. Endocrine
   h. Gastrointestinal
   i. Renal
   j. Respiratory

6. Compare and contrast prototypical drugs within a class in terms of therapeutic effects, mechanism of action and adverse effects.

7. Examine, justify and communicate the mechanism of action, use and limitations of selected non-prototypical drug(s).

8. Explain the concept of individual response to a drug in terms of age and genetic predisposition.
VII. Course Competencies

This course teaches the following competencies in the "Competencies for the New Dental Graduate".

Domain I: Critical Thinking

3: Apply biomedical science knowledge in the delivery of patient care.

Domain VI: Patient Care

A. Assessment, Diagnosis, and Treatment

12: Patient Assessment, Diagnosis, Treatment Planning and Informed Consent: Provide oral health care within the scope of general dentistry to include patient assessment, diagnosis, comprehensive treatment planning, prognosis, and informed consent.

VIII. Evaluation

Evaluation of student progress will be done by means of three non-cumulative examinations. The format of each exam will be multiple choice type questions (one best choice or matching drugs with statements). Each exam will cover a particular section of the course (material covered immediately before that exam and after the previous exam). There will generally be 4-6 questions from each lecture. Each lecturer will write questions from the topics he/she covered in the class. He/she will determine what material the class is responsible for. Sample exam questions are posted on ECO. There will be no cumulative final exam. There will be no "make-up" exams for individuals who missed an exam with an excused absence unless agreed upon by the course director. Students missing an examination without an excused absence will receive a '0' on the missed exam and will not have the option of taking the "make up" exam.

Your attendance and participation in all lectures is not required but is highly recommended. The review session before each examination is designed to answer your questions and explain any material not clear to you.

Assigning Grades

Final grades will be based on the scores obtained in the written examinations described above.

Grade weights:

Exam I (30%)
Exam II (35%)
Exam III (35%)

Remediation:

If a student receives an "E" grade in the course, the student must meet with the Course Director to schedule a cumulative remediation examination.

IX. Administrative Practices

Administrative practices for all UFCD courses are universally applied. Exceptions to or deviations from these practices are stated in the individual syllabi by the course director. When not individually stated in the syllabus, course administrative practices default to those identified under "Course Policies" on the DMD Student Website:

https://dental.ufl.edu/education/dmd-program/course-policies/

X. Grade Scale

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