COURSE NO., HOURS AND TITLE: DH 340-3 Dental Pharmacology & Pain Control

INSTRUCTOR: TBD

INSTRUCTOR CONTACT INFORMATION:
Telephone: TBD
E-mail: TBD
Office Location: TBD
Office Hours: TBD

COURSE DESCRIPTION:
This course is designed to teach the student about different drugs used in dentistry, the biochemical activity of each, and appropriate use, interactions with other drugs or systemic conditions, and some basic pharmacology terminology. Pharmacotherapeutics will be presented to the dental hygiene student in a meaningful, practical manner. Emphasis will be placed on clinical efforts, dosages, adverse effects and contraindications of drugs commonly prescribed in dentistry or which patients may be taking under direction of other health care providers or under self-direction. Information will be presented from a perspective including the pharmacological basis for drugs, the need for and use of a medical history and legal aspects related to these subjects. Concurrent enrollment with: DH 320, DH 320C, DH 341 and DH 341L. Prerequisite: DH 212, 220.

COURSE OBJECTIVES
Upon completion of this course, the following will be attained:
1. The student must have a knowledge of pharmacology, sufficient to permit the proper medical evaluation of patients for dental hygiene care;
2. The student must understand the influences that drugs taken for non-dental purposes may have on a proposed treatment and be able to modify treatment plan accordingly; and
3. The student must have a thorough understanding of the therapeutic agents used in routine practice of clinical dentistry and be able to provide the patient with appropriate instructions for compliance.
4. Describe general principles of pharmacology
5. Basic mechanisms of drug action, including receptor-mediated and receptor-independent actions, agonists and antagonists, and dose effect relationships.
6. Factors that influence the pharmacokinetics of drugs.
7. Therapeutic applications of drugs, including routes of administration, and variables that affect drug response.
8. Adverse reactions and general methods of toxicity prevention.
9. The mechanism and classification of drug interactions.
10. Describe the pharmacology of each class of drugs and the dental implications relative to oral complications and alterations in dental management.

CONTENT OUTLINE:
Topics Percentages
I. Definitions 5%
   a) Review of biomedical sciences relevant to organ systems/disease state(s) affected by these drugs
   b) Classification
c) Mechanism of action and therapeutic effects  
d) Adverse effects, drug interactions, contraindications  

II. Principles of Pharmacology  
   a) Sources of drug information  
   b) Terminology  
   c) Routes of administration  
   d) Pharmacokinetics  
   e) Dose-response relationships  
   f) Drug-receptor reactions: mechanisms of drug action  
   g) Patient variables affecting drug response: age, gender, medical conditions  
   h) Adverse drug reactions and their prevention  
   i) Drug interactions: mechanisms and classification  

III. Prescription Writing and Drug Regulation  
   a) Essentials of prescription writing  
   b) Laws and regulations (controlled substances)  
   c) New drug development  
   d) Dispensing of drugs  

IV. Autonomic Nervous System  
   a) Parasympathetic drugs  
   b) Cholinergic (para-sympathomimetic)  
   c) Anticholinergic  
   d) Sympathetic drugs  
   e) Adrenergic (sympathomimetics)  
   f) Adrenergic blocking drugs (sympatholytics)  
   g) Neuromuscular blocking agents and skeletal muscle relaxants  

V. Cardiovascular drugs  
   a) Diuretics  
   b) Antihypertensive drugs  
   c) Drugs for heart failure  
   d) Antianginal drugs  
   e) Antiarrhythmic drugs  
   f) Drugs for disorders of blood coagulation  
   g) Drugs for hyperlipidemias  

VI. Sedative/hypnotic (anti-anxiety) Drugs  
   a) Benzodiazepines  
   b) Benzodiazepine receptor agonists  
   c) Barbiturates  
   d) Non-barbiturate sedative-hypnotics  
   e) Centrally acting muscle relaxants  

VII. Analgesics  
   a) Opioids  
   b) Non-narcotic analgesics and Non-steroidal Anti-inflammatory Drugs (NSAIDs)  
   c) Drugs for migraine headaches  

VIII. Local Anesthetics  

5%  

10%
a) Routes of administration for local anesthesia  
b) Ester-types and Amide-types  
c) Vasoconstrictors and local anesthesia

IX. General Anesthesia  
   a) Stages of anesthesia  
   b) Inhaled anesthetics  
   c) Intravenous anesthetics  
   d) Adjuncts to anesthesia

X. Anti-seizure Drugs  

XI. Anti-Parkinson Drugs  

XII. Drugs for Alzheimer’s disease  

XIII. Psychotherapeutic Drugs  
   a) Antipsychotic drugs  
   b) Antidepressant drugs  
   c) Drugs for bipolar disorder  
   d) Drugs for anxiety disorders  
   e) Drugs for attention deficit-hyperactivity disorder (ADHD)

XIV. Drugs of Abuse  
   a) Drug abuse terminology  
   b) Alcohol  
   c) Tobacco  
   d) Marijuana  
   e) Hallucinogens  
   f) Stimulants (cocaine, amphetamines)  
   g) Depressants  
   h) Opioids  
   i) Inhalants (nitrous oxide, solvents)

XV. Endocrine Agents  
   a) Adrenal corticosteroids  
   b) Female reproductive hormones (estrogen, progesterone)  
   c) Male reproductive hormones (androgens, androgen antagonists)  
   d) Antidiabetic drugs  
   e) Thyroid agents

XVI. Drugs Affecting Immune Function  
   a) Antihistamines  
   b) Glucocorticoids  
   c) Immunosuppressive agents  
   d) Cytokines and anticytokines

XVII. Drugs for Arthritis and Gout  

XVIII. Antineoplastic Drugs
XIX. Antimicrobial Drugs
   a) Antibiotics
   b) Antiviral drugs
   c) Antifungal drugs
   d) Antiparasitic drugs
   e) Fluoride
   f) Chlorhexidine

XX. Gastrointestinal Drugs

XXI. Respiratory Drugs

XXII. Ophthalmic Drugs

XXIII. Vitamins and Dietary Supplements, Herbals

XXIV. Drugs used in Emergencies

Total Time: 100%

TEXTBOOKS:
Required: