

MASTER SYLLABUS

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, DH 220C.

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 | |

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| | <ul style="list-style-type: none"> c) Mechanism of action and therapeutic effects d) Adverse effects, drug interactions, contraindications | |
| II. | Principles of Pharmacology | 5% |
| | <ul style="list-style-type: none"> 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 | 5% |
| | <ul style="list-style-type: none"> a) Essentials of prescription writing b) Laws and regulations (controlled substances) c) New drug development d) Dispensing of drugs | |
| IV. | Autonomic Nervous System | 5% |
| | <ul style="list-style-type: none"> a) Parasympathetic drugs b) Cholinergic (para-symphathomimetic) c) Anticholinergic d) Sympathetic drugs e) Adrenergic (sympathomimetics) f) Adrenergic blocking drugs (sympatholytics) g) Neuromuscular blocking agents and skeletal muscle relaxants | |
| V. | Cardiovascular drugs | 5% |
| | <ul style="list-style-type: none"> 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 | 5% |
| | <ul style="list-style-type: none"> a) Benzodiazepines b) Benzodiazepine receptor agonists c) Barbiturates d) Non-barbiturate sedative-hypnotics e) Centrally acting muscle relaxants | |
| VII. | Analgesics | 5% |
| | <ul style="list-style-type: none"> a) Opioids b) Non-narcotic analgesics and Non-steroidal Anti-inflammatory Drugs (NSAIDs) c) Drugs for migraine headaches | |
| VIII. | Local Anesthetics | 10% |

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| | a) Routes of administration for local anesthesia | |
| | b) Ester-types and Amide- types | |
| | c) Vasoconstrictors and local anesthesia | |
| IX. | General Anesthesia | 3% |
| | a) Stages of anesthesia | |
| | b) Inhaled anesthetics | |
| | c) Intravenous anesthetics | |
| | d) Adjuncts to anesthesia | |
| X. | Anti-seizure Drugs | 2% |
| XI. | Anti-Parkinson Drugs | 2% |
| XII. | Drugs for Alzheimer's disease | 2% |
| XIII. | Psychotherapeutic Drugs | 2% |
| | 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 | 4% |
| | 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 | 5% |
| | a) Adrenal corticosteroids | |
| | b) Female reproductive hormones (estrogen, progestin) | |
| | c) Male reproductive hormones (androgens, androgen antagonists) | |
| | d) Antidiabetic drugs | |
| | e) Thyroid agents | |
| XVI. | Drugs Affecting Immune Function | 5% |
| | a) Antihistamines | |
| | b) Glucocorticoids | |
| | c) Immunosuppressive agents | |
| | d) Cytokines and anticytokines | |
| XVII. | Drugs for Arthritis and Gout | 2% |
| XVIII. | Antineoplastic Drugs | 2% |

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| XIX. | Antimicrobial Drugs | 6% |
| | a) Antibiotics | |
| | b) Antiviral drugs | |
| | c) Antifungal drugs | |
| | d) Antiparasitic drugs | |
| | e) Fluoride | |
| | f) Chlorhexidine | |
| XX. | Gastrointestinal Drugs | 4% |
| XXI. | Respiratory Drugs | 4% |
| XXII. | Ophthalmic Drugs | 4% |
| XXIII. | Vitamins and Dietary Supplements, Herbals | 5% |
| XXIV. | Drugs used in Emergencies | 3% |
| | Total Time: | 100% |

TEXTBOOKS:

Required:

Weinberg, M.A., Westphal Theile, C., Fine, J.B. (2013). Oral Pharmacology for the Dental Hygienist, 2nd Ed. Prentice Hall