

Course Code:	PHL 211
Course Name:	Pharmacology in dentistry
Number of hrs per unit:	1 (for two semesters)

### **Course Description:**

This course is concerned with general principles in pharmacology including pharmacokinetics and pharmacodynamics and their significance in dental practice. The course gives emphasis on pharmacological actions and therapeutic applications of drugs used or implicated in dentistry. Topics include drugs affecting the autonomic nervous system. Antimicrobial agents and analgesics. A special concern is given for drugs used locally to treat hard and soft tissue ailments and for the preparations used locally for hygienic purposes.

### **Course Contents:**

**Hours**

#### **I. General Principles in Pharmacology:**

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- **Scope of pharmacology**
- **Definitions:**
  - **Drug receptors**
  - **Agonists**
  - **Antagonists**
  - **Tolerance**
  - **Tachyphylaxis**
  - **Desensitization**
  - **Adverse reactions**
  - **Drug abuse**
  - **Therapeutic index**
- **Various routes of drug administration.**
- **Pharmacokinetics:**
  - **Absorption**
  - **Distribution**
  - **Metabolism**
  - **Excretion of drugs**
- **Pharmacodynamics:**
  - **Types and mechanisms of drug action**
  - **Dose-response relationship**
  - **Factors influencing drug safety and effectiveness**

#### **II. Drugs acting at synaptic and neuroeffector sites:**

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Mechanisms of action, pharmacological effects, general therapeutic uses in addition to uses and implications in dentistry for each of the following groups of drugs:

- **Cholinomimetic drugs.**
- **Antimuscarinic drugs.**
- **Ganglion blocking agents.**

- Catecholamines and sympathomimetic drugs.
- Alpha and beta adrenergic receptor antagonists.
- Adrenergic neuron blockers
- Drugs acting at the neuromuscular junction.

### **III. Drugs acting locally on hard and soft tissues of the mouth:**

Preparations, actions, reactions and uses of the following:

- Dentifrices. 6
- Mouth washes.
- Antiseptics.
- Demulcents and emollients.
- Mechanical protectives.
- Absorbable haemostatics.
- Astringents.
- Keratolytics and antiseborrheics.
- Enzymes (hyaluronidase, varidase, trypsin, and chemotrypsin).
- Obtundants, mummifying agents.
- Fluorides.

### **IV. Local Anesthetics:**

- Classification.
- Local effects. 2
- Systemic effects.
- Adverse reactions.
- General and dental uses.

### **V. Antimicrobial agents (Antibiotics, sulfonamides and antifungal drugs:**

- Sites and mechanisms of action. 4
- Basis of choice of the proper antimicrobial agent.
- Factors influencing antimicrobial effects and adverse reactions.
- General adverse reactions with special reference to dental reactions.
- Therapeutic uses particularly in dental practice.
- Contraindications.

### **VI. Analgesics:**

- Non-steroidal anti-inflammatory agents: 2
  - Pharmacological effects
  - Adverse reactions
  - Therapeutic uses and dental applications.
- Narcotic analgesics (natural, semisynthetic, and

**synthetic opiates):**

- **Actions**
- **Therapeutic uses**
- **Implications and uses in dental practice**
- **Adverse effects and drug dependence.**

**VII. Glucocorticoids:**

- **Actions**
- **Therapeutic uses**
- **Adverse effects**
- **Implications in dental practice.**