

**Course Outline for:** DENH 2263 Pain Management**A. Course Description**

1. Number of credits: 2
2. Lecture hours per week: 1
3. Lab hours per week: 2
4. Prerequisites DENH 1142, 1162, BIOL 1142
5. Corequisites: None
6. MnTC Goals: None

Preparation of the dental hygiene student in effective and safe administration of local anesthesia and nitrous oxide-oxygen inhalation sedation.

**B. Date Last Reviewed/Updated:** January 2022**C. Outline of Major Content Areas**

1. Anxiety and Pain Control in Dentistry
2. Head and Neck Anatomy Review
3. Armamentarium
4. Pharmacology of Topical and Local Anesthetics
5. Client Evaluation
6. Calculation of Local Anesthetic Dosages
7. Oraqix Application
8. Basic Injection Technique
9. Technique: Supraperiosteal Injection, ASA, MSA, PSA, Infraorbital, Palatal Injections, IA/L, Buccal, Mental/Incisive, IO, GG, Intraseptal, PDL
10. Introduction to the Wand/CompuDent and Pressure Syringe
11. Local and Systemic Complications Involving Local Anesthesia
12. Professionalism, Treatment Planning and Record Keeping Related to Pain Management
13. Overview of Nitrous Oxide – Oxygen Inhalation Sedation
14. Stages/Levels of Anesthesia
15. History of Nitrous Oxide-Oxygen Inhalation Sedation
16. Pharmacology, Chemistry and Physiology of Nitrous Oxide-Oxygen Inhalation Sedation
17. Signs and Symptoms
18. Equipment, Safety Measures, Infection Control
19. Technique of Administration
20. Indications for Use, Contraindications
21. Complications and Management

22. Advantages and Disadvantages
23. Chronic Exposure and Nitrous Oxide Abuse
24. Legal and Ethical Issues Related to Pain Management

#### **D. Course Learning Outcomes**

Upon successful completion of the course, the student will be able to:

1. Discuss anxiety and pain control in Dentistry.
2. Discuss the pharmacodynamics of topical and local anesthesia.
3. Assess each client's health history to determine suitability to receive local anesthetics and vasoconstrictors.
4. Calculate safe local anesthetic dosages.
5. Relate basic head and neck anatomy to clinical application of local anesthesia.
6. Demonstrate proper assemble, disassemble and maintenance of local anesthesia armamentarium.
7. Administer a safe, comfortable, and effective injection for control and elimination of pain. Specific injections include: Supraperiosteal Injection, Anterior Superior Alveolar, Middle Superior Alveolar, Posterior Superior Alveolar, Greater Palatine, Nasopalatine, Inferior Alveolar/Lingual, Incisive/Mental, Buccal.
8. Describe the Infraorbital Nerve Block and the Gow-Gates Mandibular Nerve Block, Periodontal Ligament Injection (PDL), and Intraseptal injection.
9. Administer the PDL and Intraseptal injections on a simulation model utilizing the Wand/CompuDent and/or a pressure syringe.
10. Administer Oraqix in a safe and effective manner on the appropriate client(s).
11. Prepare an appropriate client treatment plan regarding local anesthesia and/or nitrous oxide oxygen sedation and dental hygiene care.
12. Document local anesthetic and nitrous oxide-oxygen administration appropriately in the dental record.
13. Integrate professional, legal and ethical concerns with the practice of pain control.
14. Discuss local and systemic complications that may result from the administration of anesthetic agents and the proper management of these complications.
15. Discuss the concept of nitrous oxide-oxygen inhalation sedation.
16. Assess levels of sedation.
17. Understand the pharmacology and chemistry of nitrous oxide-oxygen inhalation sedation.
18. Relate the understanding of human anatomy and physiology to the application of nitrous oxide oxygen inhalation sedation.
19. Discuss the indications and contraindications for use of nitrous oxide-oxygen inhalation sedation.
20. Recognize signs and symptoms that indicate obtaining a client's baseline level of nitrous oxide oxygen sedation.
21. Demonstrate proper handling of nitrous oxide-oxygen sedation equipment, respecting environmental hygiene and safety.

22. Administer nitrous oxide-oxygen sedation to the dental client in a safe and effective manner.
23. Discuss the advantages and disadvantages of inhalation sedation with nitrous oxide-oxygen.
24. Discuss prevention, recognition, and management of complications associated with nitrous oxide
25. Discuss chronic exposure and nitrous oxide-oxygen abuse.

**E. Methods for Assessing Student Learning**

1. Lab/Clinical Skill Performances
2. Assignments/Worksheets
3. Quizzes
4. Written exams
5. Practical exams

**F. Special Information**

None