

**APPLICATION FOR NEW COURSE**

Submitted by College of Lexington Community College Date September 29, 2003

Department/Division offering course Dental Hygiene ---- NSHT

2 Proposed designation and Bulletin description of this course:

- (a) DHY 229 (b) Local Anesthesia  
Prefix and Number Title\*
- (c) 1.25 (d) 3  
Lecture/Discussion hours per week Laboratory hours per week
- (e) 0 (f) 2  
Studio hours per week Credits

Course description: **Common oral local anesthesia injection techniques and the related background information are addressed in this course. Subjects include: anatomic considerations, armamentarium, basic injection techniques, record keeping, neurophysiology, related pharmacology, patient evaluation, complications and contraindications. The pharmacology, administration and contraindications of Nitrous Oxide are also included. This elective course satisfies the Kentucky State Dental Practice Act regarding "delegation of block and infiltration anesthesia and nitrous oxide analgesia to dental hygienists."**

(g) Prerequisites (if any): **Completion of DHY 130, DHY 131, DHY 135 and DHY 136 all with a grade of C or better.**

(h) May be repeated to a maximum of N/A (if applicable)

3. To be cross-listed as: N/A  
Prefix and Number Signature, Chair, cross-listing department

4. Effective Date: Fall 2004 (semester and year)

5. Course to be offered (a) Yes (b) No (c) No  
Fall Spring Summer

6. Will the course be offered each year? Yes, less frequently  
(Explain if not annually):

Note: If the title is longer than 24 characters (including spaces), write a sensible title (not exceeding 24 characters) for use on transcripts:

7. Why is this course needed: **Recently the Kentucky Dental State Practice Act was amended to allow dental hygienists to administer local anesthesia. This course offers currently enrolled students the option of taking a local anesthesia course prior to graduation. The course content has been specifically designed to satisfy the educational requirements of the recent law change.**

8. (a) By whom will the course be taught? **Dental Hygiene faculty**

(b) Are facilities for teaching the course now available? No  Yes

If not, what plans have been made for providing them?

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9. What enrollment may be reasonably anticipated? 24

10. Will this course serve students in the Department primarily? No  Yes

Will it be of service to a significant number of students outside the Department?

No  Yes If so, explain \_\_\_\_\_

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Will the course serve as a University Studies Program course?  No

Yes

If yes, under what Area? \_\_\_\_\_

Check the category most applicable to this course:

traditional; offered in corresponding departments elsewhere;

relatively new, now being widely established

not yet to be found in many (or any) other universities

Is this course part of a proposed new program?  No  Yes If yes, which?

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13. Will adding this course change the degree requirements in one or more programs?\*

No  Yes If yes, explain the change(s) **(It is an elective course)**

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- Note: Approval of this course will constitute approval of the program change unless other program modifications are proposed.

Attach a list of the major teaching objectives of the proposed course and outline and/or reference list to be used.

### Proposed Teaching Objectives

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Upon completion of **DHY 229 Local Anesthesia** the student can:

1. **Identify and describe landmarks of the oral cavity, head and neck as they relate to oral anesthesia.**
2. **Discuss the nervous and vascular tissues associated with the oral cavity as they relate to the delivery of oral anesthesia.**
3. **Collect and review appropriate patient history data to evaluate the consequences of anesthesia.**
4. **Discuss the pharmacology and correctly calculate the respective dosage of common local anesthetic agents used in dentistry.**
5. **Achieve anesthesia by demonstrating common oral block and infiltration injection techniques.**
6. **Discuss common adverse local and systemic reactions associated with oral anesthesia administration.**
7. **Describe and demonstrate appropriate actions in response to potential adverse reactions and related medical emergencies.**
8. **Discuss the application, pharmacology and adverse reactions of nitrous oxide and demonstrate its administration.**

**Proposed Course Outline- See Attached**

**Proposed Learning Resources for course:**

**Handbook of Local Anesthesia**, by Stanley F. Malamed, DDS, 1997, 4<sup>th</sup> Edition, Mosby, Inc.

**Medical Management in the Dental Office**, by Stanley F. Malamed, DDS, 2002, 5<sup>th</sup> Edition, Mosby, Inc.

**Applied Pharmacology for the Dental Hygienist**, by Barbara Requa-Clark, RDH, 4<sup>th</sup> Edition, 2000, Mosby, Inc.

**Worldwide Web/Internet as applicable.**

15. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted. **See attached letter to KCTCS from Dr. Chiswell.**
16. Within the Department, who should be contacted for further information about the proposed course?  
Name **Dr. C. Lawrence Chiswell** Phone Extension: **257-4872 ext. 4091**

Signatures of Approval:

Department Chair: Gregory A. Gold Date: 10-17-03

~~Dean~~ Dean of the College: [Signature] Date: 11/20/03

Date of Notice to the Faculty: \_\_\_\_\_

\*Undergraduate Council: \_\_\_\_\_

\*University Studies: \_\_\_\_\_

\*Academic Council for the Med. Ctr: \_\_\_\_\_ Date: \_\_\_\_\_

\*Senate Council: \_\_\_\_\_ Date: \_\_\_\_\_

ACTION OTHER THAN APPROVAL: \_\_\_\_\_  
\_\_\_\_\_

**APPLICATION FOR NEW COURSE**  
**Additional Information on CCS Forms**

1. Course Outline: (Two level outline required)

- A. Armamentarium**
  - 1. Instruments
  - 2. Tray Set up
  - 3. Supplies
- B. Dose Calculation/Record Keeping**
  - 1. Common Anesthetics
  - 2. Maximum Safety Dosages
  - 3. Progress Notes
- C. Anatomic Considerations**
  - 1. Anatomy of the Skull
  - 2. Trigeminal Nerve Branches
  - 3. Access to Nerves
- D. Nerve Physiology**
  - 1. Neuron Anatomy
  - 2. Cell Walls
  - 3. Forces influencing Ion Movement
  - 4. Sodium Pumps
  - 5. Electrical Potentials
  - 6. Transmission of Impulse
- E. Pharmacology of Local Anesthetics**
  - 1. Neurophysiology
  - 2. Mechanism of Action
  - 3. Range of Effects
  - 4. Chemistry
  - 5. Toxic Effects
- F. Pharmacology of Vasoconstrictors**
  - 1. Autonomic Nervous System
  - 2. Forces Working Against Anesthetics
  - 3. Mechanism of Action
  - 4. Receptors
  - 5. Benefits
  - 6. Risks/Contraindications
- G. Infiltration Technique**
  - 1. Locations/Landmarks
  - 2. Techniques
  - 3. Advantages/Disadvantages
  - 4. Practice
- H. Maxillary Injection Techniques**
  - 1. Infraorbital Injection Technique
  - 2. Posterior Superior Alveolar Injection Technique
  - 3. Nasopalatine Injection Technique
  - 4. Greater Palatine Injection Technique
  - 5. Locations/Landmarks
  - 6. Mandibular Injections Techniques
  - 7. Inferior Alveolar Injection Technique
  - 8. Lingual Injection Technique
  - 9. Long Buccal Injection Technique
  - 10. Mental Injection Technique

- I. N<sub>2</sub>O Armamentarium/Pharmacology
  - 1. Mechanism of Action
  - 2. Stages of Anesthesia
  - 3. Goal of Use
  - 4. Precautions/Contraindications
  - 5. Equipment
  - 6. Technique
- J. N<sub>2</sub>O Administration
  - 1. Practice
- K. Adverse Effects/Local and Systemic
  - 1. Signs and Symptoms
  - 2. Causes
  - 3. Toxicity
  - 4. Overdose
  - 5. Prevention
  - 6. Treatment
  - 7. Hypersensitivity
  - 8. Drug Interactions
  - 9. Local Manifestations
  - 10. Needle Breakage
  - 11. Post Injection Injury
  - 12. Facial Paralysis/Parathesia
- L. Medical Emergencies
  - 1. Causes
  - 2. Mild Systemic Reactions
  - 3. Severe Systemic Reactions
  - 4. Anaphylactic Shock
  - 5. Drug Overdose Reactions
  - 6. Management of Manifestations

2. List of Experiments/Activities: (If laboratory or clinic is involved) **The course requires significant clinical access for injection practice. Nine injections are given by each student. To demonstrate competence, each of these nine techniques are given at least three times. The nine injections are as follows:**

- 1. Infiltration
- 2. Posterior Superior Alveolar
- 3. Infraorbital (Middle and Anterior Superior Alveolar)
- 4. Greater Palatine
- 5. Mandibular (Inferior Alveolar)
- 6. Lingual
- 7. Mental
- 8. Long Buccal
- 9. Nasopalatine

**In addition, there are two nitrous oxide administration exercises required of each student.**

3. For Inclusion on LCC General Education List: N/A  
 A. Degree Area (AA/AS or AAS or both)

- B. Competency Area
  - C. General Education Competency Statement (List and provide examples of implementation methods/activities)
  - D. Across the Curriculum Competencies (List and provide examples of implementation methods/activities)
4. For Inclusion on University Studies List: (A syllabus must be attached.) N/A
- A. Area
  - B. Description of Writing Component