DH 78 Course Outline as of Fall 2022

CATALOG INFORMATION

Dept and Nbr: DH 78 Title: LOCAL ANESTHESIA
Full Title: Local Anesthesia/Nitrous Oxide Conscious Sedation
Last Reviewed: 2/7/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	0.75	17.5	Lecture Scheduled	13.13
Minimum	1.00	Lab Scheduled	1.50	6	Lab Scheduled	26.25
		Contact DHR	0		Contact DHR	0
		Contact Total	2.25		Contact Total	39.38
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 26.25 Total Student Learning Hours: 65.63

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Students will learn techniques of pain control by the administration of local anesthetics and nitrous oxide/conscious sedation. The course will cover treating the more complex clinical patient during advanced dental hygiene care procedures.

Prerequisites/Corequisites:
Course Completion of DH 74 and DH 75

Recommended Preparation:

Limits on Enrollment:
Acceptance in program

Schedule of Classes Information:
Description: Students will learn techniques of pain control by the administration of local anesthetics and nitrous oxide/conscious sedation. The course will cover treating the more complex clinical patient during advanced dental hygiene care procedures. (Grade Only)
Prerequisites/Corequisites: Course Completion of DH 74 and DH 75
Recommended:
Limits on Enrollment: Acceptance in program

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Summer 2000	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Major Applicable Course

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Demonstrate the accurate dosage and type of local anesthetic (LA) agent, based on the patient's health history and treatment needs; and effectively apply it to the dental hygiene care plan
2. Demonstrate the dental hygiene care plan and implement the safe use of LA and nitrous-oxide oxygen sedation to manage patient fear, anxiety, and/or pain in a dental clinic setting

Objectives:
At the conclusion of this course, the student should be able to:
1. Describe the physiologic mechanism of nerve conduction
2. Identify both topical and local anesthetic agents along with their indications and contraindications for use
3. Identify and assemble the local anesthesia armamentarium
4. Identify anatomical landmarks and nerves associated with specific areas to be anesthetized
5. Demonstrate the safe and effective procedural techniques for each type of injection
6. Describe various local and systemic complications that may develop after the delivery of local anesthesia
7. Determine when administration of nitrous oxide sedation is appropriate and be able to recognize the signs and symptoms associated with safe and effective administration of nitrous oxide sedation
8. Identify fact from fallacy the potential occupational hazards for clinicians when using nitrous oxide oxygen sedation
9. List patient advantages and disadvantages associated with the use of nitrous oxide sedation
10. Describe the administration and monitoring of nitrous oxide sedation, and acknowledge appropriate response measures

Topics and Scope:

I. Neurophysiology

A. Nerve impulse: initiation & propagation
B. Nerve conduction
C. Specific Receptor Theory
D. Characteristics of LA molecule
E. Acidic environment and LA effectiveness

II. Properties of LA Local Anesthesia Agents*
A. Maximum safe dose explained
B. Calculating maximum safe dose of LA
C. Limiting agent
D. Contraindications of topical anesthetics
E. Duration of LA agents
F. Characteristics of topical anesthetics
G. Selecting the correct LA based on patient needs
H. Cartridge ingrediants

III. Vasoconstrictors Agents*
A. Types of vasoconstrictors
B. Purpose of vasoconstrictors
C. Ingredients
D. Chemical structure of vasoconstrictor
E. Selection of vasoconstrictors and patient needs
F. How epinephrine and levonordefrin work
G. Maximum safe dose

VI. Absolute and Relative Contraindications
A. Allergy
B. Sensitivity
C. Local anesthetic drug to drug interactions
D. Local anesthetic drug to systemic disease interactions

IV. Local Anesthesia(LA) Armamentarium*
A. Assembly
B. Syringe
C. Needle selection
D. Cartridge selection
E. Disassembly
F. Topical anesthetic

VI. Proper disposal of Local Anesthesia Cartridge and Needle*
A. Sharps Disposal
B. Non-Hazardous Pharmaceutical Waste

VII. Complications*
A. Systemic and Local
B. Management

VIII. Identification of Anatomical Landmarks Associated with Supplemental, Maxillary, and Mandibular Injections*
A. Supraperiostial / Local infiltration
B. Anterior middle superior alveolar nerve block with the infraorbital nerve block
C. Middle superior alveolar nerve block

D. Posterior superior alveolar nerve block
E. Greater palatine nerve block
F. Nasopalatine nerve block
G. Inferior alveolar nerve block
H. Lingual nerve block
I. Long buccal nerve block
J. Mental nerve block
K. Incisive nerve block
L. Papillary(Intraseptal)
M. Gow- Gates
N. Anterior Middle Superior Alveolar

IX. Administration of Supplemental, Maxillary, and Mandibular Injections on a Student Partner*

A. Supraperiostial / Local infiltration
B. Anterior middle superior alveolar nerve block with the infraorbital nerve block
C. Middle superior alveolar nerve block
D. Posterior superior alveolar nerve block
E. Greater palatine nerve block
F. Nasopalatine nerve block
G. Inferior alveolar nerve block
H. Lingual nerve block
I. Long buccal nerve block
J. Mental nerve block
K. Incisive nerve block
L. Papillary(Intraseptal)

X. Nitrous Oxide Conscious Sedation*

A. History
B. Physiology
C. Pharmacology
D. Tidal volume
E. Baseline
F. Indications/contraindications
G. Advantages/disadvantages
H. Equipment
I. Scavenger systems
J. Hazards to personnel

XI. Administration of Nitrous Oxide Sedation*

A. Technique for administration
B. Equipment
C. Assembly
D. Fail-safe
E. Health history assessment
F. Techniques
G. Signs and symptoms
H. Ideal sedation
I. Over-sedation
J. Complications
K. Monitoring
L. Oxygenation at end of procedure

XII. Legal and Ethical Considerations
A. Communication
B. Informed consent
C. Documentation
D. Allowable duties under Dental Practice Act
E. Risk reduction protocols
F. Post exposure management

*Denotes topic and subtopics taught in both lecture and clinic

Assignment:

1. Lecture Assignments:
a. Reading 20-40 pages
b. Readiness assignment evaluation (RAE) (3-5)
c. Quizzes (2-6)
d. Case studies (2-4)
e. Final exam
2. Lab Assignments:
a. Weekly injection experience check-off (3-6)
b. Nitrous equipment competency (1-2)
c. Nitrous delivery competency on student partner with extra oral exam (EO) procedure
d. Weekly lab reflections

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Case studies, RAE and lab reflections	Writing 10 - 15%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None	Problem solving 0 - 0%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Weekly injection experience, nitrous oxide delivery, and nitrous equipment competency	Skill Demonstrations 45 - 60%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes and final exam	Exams 25 - 40%

Other: Includes any assessment tools that do not logically fit into the above categories.

Weekly online discussions	Other Category 5 - 10%

Representative Textbooks and Materials:
Darby and Walsh Dental Hygiene, 5th Edition Denise M. Bowen, RDH, MS and Jennifer A Pieren, RDH, MS 2020
Optional: Located in the library: Please use call number to check-out: Call # RK510 T434 2012 Drug Information Handbook for Dentistry. (Students can access through SRJC library resource)
Instructor prepared materials on CANVAS