DH R020: LOCAL ANESTHESIA FOR NITROUS OXIDE FOR DENTAL HYGIENE

Originator
aderdiarian

Co-Contributor(s)

Name(s)
Hawley, Carinne (chawley)

College
Oxnard College

Discipline (CB01A)
DH - Dental Hygiene

Course Number (CB01B)
R020

Course Title (CB02)
Local Anesthesia for Nitrous Oxide for Dental Hygiene

Banner/Short Title
Local Anesthesia for DH

Credit Type
Credit

Start Term
Spring 2021

Catalog Course Description
This course teaches pharmacology, physiology, and proper use of local anesthetic agents. The course also teaches the anatomy of the trigeminal nerve, physiology of nerve conduction, how anesthesia works, and prevention and management of emergencies.
Limitations on Enrollment: Current CPR certification for health care provider (American Heart Association) or professional rescuer (American Red Cross)
Proof of freedom from and immunity to communicable diseases
No acrylic or long nails in clinical settings
Current negative TB test or chest x-ray
Physical examination demonstrating general good health
No visible tattoos or visible body piercings except single studs in earlobes

Taxonomy of Programs (TOP) Code (CB03)
1240.20 - *Dental Hygienist

Course Credit Status (CB04)
D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)
C (Not transferable)

Course Basic Skills Status (CB08)
N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)
C - Clearly Occupational

Course Cooperative Work Experience Education Status (CB10)
N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)
Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)
N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)
Y - Not Applicable

Course Noncredit Category (CB22)
Y - Credit Course

Funding Agency Category (CB23)
Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)
1 - Program Applicable

General Education Status (CB25)
Y - Not Applicable

Support Course Status (CB26)
N - Course is not a support course

Field trips
Will not be required

Grading method
Letter Graded

Does this course require an instructional materials fee?
No

Repeatable for Credit
No

Is this course part of a family?
No

Units and Hours

Carnegie Unit Override
No

In-Class

Lecture
Minimum Contact/In-Class Lecture Hours
17.5
Maximum Contact/In-Class Lecture Hours
17.5

Activity

Laboratory
Minimum Contact/In-Class Laboratory Hours
52.5
Maximum Contact/In-Class Laboratory Hours
52.5

Total in-Class

Total in-Class
Total Minimum Contact/In-Class Hours
70
Total Maximum Contact/In-Class Hours
70

Outside-of-Class

Internship/Cooperative Work Experience

Paid

Unpaid

Total Outside-of-Class

Total Outside-of-Class
Minimum Outside-of-Class Hours
35
Maximum Outside-of-Class Hours
35

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
105
Total Maximum Student Learning Hours
105

Minimum Units (CB07)
2
Maximum Units (CB06)
2

Prerequisites
DH R010 and DH R011 and DH R012 and DH R013 and DH R014 and DH R015

Corequisites
DH R021 and DH R022 and DH R023 and DH R024 and DH R025

Limitations on Enrollment
Current CPR certification for health care provider (American Heart Association) or professional rescuer (American Red Cross)
Proof of freedom from and immunity to communicable diseases
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Entrance Skills

Entrance Skills

To successfully complete the course the student will need
1. basic mathematical computation skills and ability to comprehend mathematical concepts to complete drug dosage calculations.
2. The student will need critical thinking skills to compile and synthesize personal medical and dental histories with proposed dental treatment.
3. The student will need to apply knowledge of head and neck anatomy and oral inspection skills to safely administer local anesthesia.

4.Knowledge of infection control and prevention of disease transmission are essential.

Prerequisite Course Objectives

DH R010-Recognize normal oral structures
DH R010-Define the terms used in dental anatomy nomenclature
DH R010-Recognize and describe the components of the oral cavity
DH R012-Identify the various openings, foramina, and canals located within the skull
DH R012-Describe and locate various parts and landmarks of both the maxilla and mandible
DH R012-Name the specific branches of the trigeminal nerve and which areas of the face, teeth and oral cavity each supplies
DH R014-Identify the major sources of contamination in the dental office and describe effective methods of controlling contamination or eliminating it from each source
DH R014-State the rationale for combining questionnaire and interview techniques to obtain the necessary patient information
DH R014-List the components of a comprehensive health history and explain the relevance of each
DH R014-Identify specific conditions and/or responses that indicate the need for antibiotic premedication, sedation, change in medication, special appointment planning, additional laboratory studies and special precautions to prevent disease transmission and allergic reactions
DH R014-Identify responses that necessitate consultation with the dentist and/or physician
DH R014-List history update question to be asked at recall appointments
DH R014-Identify the characteristics to observe in assessing a patient's general appearance and state why they may be significant to treatment
DH R014-Discuss the role dentistry plays in identifying and monitoring hypertension
DH R014-Identify the importance of accurate oral inspection
DH R015-Use proper sterilizing and sanitizing procedures in clinic, and maintain the chain of asepsis
DH R015-Correctly operate and maintain the dental unit
DH R015-Describe and take comprehensive medical, dental, and personal histories

Requisite Justification

Requisite Type
Prerequisite

Requisite
DH R010

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Prerequisite

Requisite
DH R011

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Prerequisite

Requisite
DH R012

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Prerequisite

Requisite
DH R013

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Prerequisite

Requisite
DH R014

Requisite Description
Course not in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Prerequisite

Requisite
DH R015

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Corequisite

Requisite
DH R021

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Corequisite

Requisite
DH R022

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Corequisite

Requisite
DH R023

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Requisite Type
Corequisite

Requisite
DH R024

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Content review

Student Learning Outcomes (CSLOs)

	Upon satisfactory completion of the course, students will be able to:
1	Perform techniques used in anesthesia injections in dentistry.
2	Identify landmarks for anesthesia injections in dentistry.
3	Calculate the maximum recommended dose of local anesthesia given to a patient.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	Explain the pharmacology, physiology, and proper use of local anesthetic agents
2	Analyze the anatomy of the trigeminal nerve, physiology of nerve conduction, and how anesthesia works
3	Explain the armamentarium for local anesthesia injections
4	Demonstrate techniques used in anesthesia injections in dentistry
5	Explain procedures for the prevention of emergencies
6	Demonstrate competency in the management of medical and dental emergencies
7	Demonstrate competency in the application of nitrous oxide

Course Content

Lecture/Course Content

1. Anesthetic Agents Used in Dentistry
   a. Categories: amines versus esters
   b. Topical anesthetics
   c. Parenteral anesthetics
2. Neurophysiology of the Trigeminal Nerve

   a. Division II—maxillary branch
   b. Division III—mandibular branch
   c. Physiology and psychology of pain
3. Armamentarium Necessary for Administration of Local Anesthetic Agents
   a. Syringe
   b. Needle
   c. Carpule
4. Systemic Complications and/or Considerations
   a. Respiratory
   b. Cardiac
5. Administration of Local Anesthetics
   a. Division II injections: posterior superior alveolar nerve block, infraorbital nerve block
   b. Division II injections: inferior alveolar nerve block, mental nerve block
6. Medical Emergencies
   a. Drug-related emergencies
   b. Emergency drug kit and its use
   c. Prevention, recognition, and management
7. Nitrous Oxide Armamentarium
   a. Techniques for administration

Laboratory or Activity Content

1. Demonstrate knowledge of basic clinical and behavioral sciences.
2. Apply knowledge of basic clinical and behavioral sciences in providing patient care.
3. Utilize problem-solving and decision-making skills in providing patient care.
4. Demonstrate clinical skills essential for treating patients.
5. Identify the patient at risk for a medical emergency and be prepared to handle the emergency should one occur in the course of treatment.
6. Recognize medical conditions that require treatment modifications prior to or during dental hygiene treatment.
7. Control pain and anxiety during treatment through the use of accepted clinical techniques and appropriate behavioral management strategies.

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Skills demonstrations
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Clinical demonstration
Computational homework
Essay exams
Essays
Film/video productions
Individual projects
Laboratory activities
Oral presentations
Projects
Problem-Solving Assignments
Problem-solving exams
Quizzes
Role playing
Skills demonstrations
Treatment plans

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Collaborative group work
Clinical demonstrations

Class activities
Class discussions
Case studies
Distance Education
Demonstrations
Instructor-guided use of technology
Lecture

Describe specific examples of the methods the instructor will use:

1. Instructor lectures provide factual information on specific themes and topics. Lecture presents a wide array of anesthetic information relating to course topics while noting the most important landmarks and techniques.
2. Viewing and listening to video, audio, and other visual sources to provide a greater understanding of local anesthesia.
3. Instructor will demonstrate on skulls the identifying anatomical landmarks in order to deliver effective injections.

Representative Course Assignments

Writing Assignments

1. Writing assignments include essay exams on topics relating to local anesthesia

Critical Thinking Assignments

1. Case study which evaluates comprehension and critical analysis of thinking and analysis

Reading Assignments

1. Students are required to spend a minimum of 2 hours per week outside the regular class time doing independent reading and studying in professional journals, for example The Journal of the American Dental Association, and related books

Skills Demonstrations

1. Evaluations which act as a precursor to the competency exams and test the students' understanding of how to handle armamentarium and correctly deliver local anesthetic.

Outside Assignments

Representative Outside Assignments

1. Students are required to spend a minimum of 2 hours per week outside the regular class time doing independent reading and studying in their textbook and review of lecture material.
2. Students are required to study anatomy on skulls.
3. Students are required to review instructional videos for local anesthesia injections.

District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

Area F: Ethnic Studies

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type
Textbook

Description
Demetra Daskaios Logothetis (2017). *Local Anesthesia for the Dental Hygienist* (2nd). St.Louis, Missouri Mosby.

Resource Type
Textbook

Description
Malamed, Stanley F., DDS (2015). *Medical Emergencies in the Dental Office* (7th). St.Louis,Missouri Mosby.

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (51%–99% online)
Hybrid (1%–50% online)
100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Zoom or comparable video conferencing software will be utilized to lecture on course content, demonstrate lab assignments, answer student questions in real time, and provide student assistance on anything that is course related.
Asynchronous Dialog (e.g., discussion board)	Topics will be presented for discussion with the opportunity to provide commentary and feedback on fellow student responses.
E-mail	Topics will be presented for discussion with the opportunity to provide commentary and feedback on fellow student responses.
Face to Face (by student request; cannot be required)	Face to face with students will take place at student request to discuss specific questions, issues, or concerns.
Synchronous Dialog (e.g., online chat)	Lecture will be held synchronously at a designated weekly meeting.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Zoom or comparable video conferencing software will be utilized to lecture on course content, demonstrate lab assignments, answer student questions in real time, and provide student assistance on anything that is course related.
Asynchronous Dialog (e.g., discussion board)	Topics will be presented for discussion with the opportunity to provide commentary and feedback on fellow student responses.
E-mail	Topics will be presented for discussion with the opportunity to provide commentary and feedback on fellow student responses.
Face to Face (by student request; cannot be required)	Face to face with students will take place at student request to discuss specific questions, issues, or concerns.
Other DE (e.g., recorded lectures)	Any real-time instruction will be recorded and available to students through the LMS.
Synchronous Dialog (e.g., online chat)	Lecture will be held synchronously at a designated weekly meeting.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Other DE (e.g., recorded lectures)	Any real-time instruction will be recorded and available to students through the LMS.
Synchronous Dialog (e.g., online chat)	Lecture will be held synchronously at a designated weekly meeting.
Video Conferencing	Zoom or comparable video conferencing software will be utilized to lecture on course content, demonstrate lab assignments, answer student questions in real time, and provide student assistance on anything that is course related.
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Face to Face (by student request; cannot be required)	Face to face with students will take place at student request to discuss specific questions, issues, or concerns.
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Examinations

Hybrid (1%–50% online) Modality
Online

Hybrid (51%–99% online) Modality
Online

Primary Minimum Qualification
DENTAL TECHNOLOGY

Additional local certifications required
All dental hygiene program faculty members must possess a baccalaureate or higher degree in a discipline related field and must have current knowledge of the specific subjects they are teaching and background in appropriate educational methodology. Dentists or dental hygienists who supervise students' clinical procedures must have qualifications which comply with the state dental or dental hygiene practice act. For this class, an instructor must have a license, such as a license to practice dentistry or dental hygiene, which covers the administration of local anesthetic

Review and Approval Dates

Department Chair
04/26/2020

Dean
04/26/2020

Technical Review
05/13/2020

Curriculum Committee
05/13/2020

Curriculum Committee
12/09/2020

CCCCO
MM/DD/YYYY

Control Number
CCC000143808

DOE/accreditation approval date
MM/DD/YYYY