

SYLLABUS
DH 309 PAIN CONTROL IN DENTISTRY
CRN 41131

COURSE NUMBER AND TITLE:	DH 309 PAIN CONTROL IN DENTISTRY
COURSE CREDIT:	4 Semester Credit Hours
TERM:	May 2022 [May 9- May 27]
LECTURE/LAB/CLINIC:	Lecture, Laboratory- AC 217 Clinic in Room AC 223 M, T, W, R, F 8:00am-12:30pm
COURSE COORDINATOR:	Terry R. Dean, D.M.D. Office: AC 228 Phone: 270-745-2213 E-mail: terry.dean@wku.edu
SUPPORTING FACULTY:	Joseph Evans, DDS Gina Miller, RDH, BSDH, MA
PREREQUISITES:	DH 212, DH 271 and DH 206 with a grade of “C” or better or with approval by Program Director. Current CPR (Healthcare Provider level) and current Liability insurance.
REQUIRED TEXTS:	<u>Handbook of Local Anesthesia (Paperback)</u> Stanley Malamed, 7 th edition (2020). ISBN#- 9780323582070. Publisher: Elsevier/C.V. Mosby. Or <u>Local Anesthesia for Dental Professionals.</u> Kathy Bassett, Arthur DiMarco, Doreen Naughton. Second edition (2015). ISBN-13: 978-0133077711. Publisher: Pearson And <u>Handbook of Nitrous Oxide and Oxygen Sedation.</u> Morris S. Clark, ISBN#- 9780323567428 Publisher: C.V. Mosby Edition: 5 TH edition (2020) <u>McMinn’s Color Atlas of Head and Neck Anatomy.</u> Logan, Reynolds, Rice & Hutchings. 5 th edition, (2017) Elsevier. ISBN: 978-0-7020-7017-4 or e-book E-ISBN 9780702070433. [This text will be invaluable as a resource for review of anatomy related to local anesthesia] (4 ^h edition is acceptable.)
REFERENCE TEXTS:	<u>Management of Pain & Anxiety in the Dental Office.</u> Dionne, Phero & Becker. ISBN-0-7216-7278-7. W. B. Saunders. 2002. <u>Local Anesthesia for the Dental Hygienist.</u> D. D. Logothetis. ISBN-978-0323-7371 4. Elsevier 1st edit. 2004. <u>Pharmacology and Therapeutics for Dentistry.</u> Yagiela, Dowd, & Neidle. ISBN-0 323-01618-9. Mosby Inc. 5 th edit. 2004. <u>Applied Pharmacology for the Dental Hygienist.</u> Haveles, Elena Bablenis. ISBN: 0323595391. Elsevier, 8 th Edition, 2020. <u>Illustrated Anatomy of the Head and Neck.</u> Fehrenbach & Herring. ISBN- 0-7216-4082-6. W. B. Saunders. 1996 or newer editions. <u>WKU library</u> - has a wealth of books on anatomy and related structures. http://topcat2000.wku.edu/

Course description: This course is designed to prepare the dental hygiene student to administer local anesthesia and nitrous oxide/oxygen sedation at a clinical level of competency. Students will study and perform various local anesthetic injection techniques, and will administer nitrous oxide and oxygen to achieve conscious sedation. Students will also study the pharmacology of nitrous oxide and local anesthetic agents.

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Instructor note: The course is designed to provide the learner with the knowledge and skills necessary to effectively administer block and infiltration anesthesia, as well as nitrous oxide analgesia. The course will include classroom, laboratory, and clinical instruction. Participants will work in groups of 2, 3 or 4 and administer local anesthesia and nitrous oxide analgesia on each other. *This course is intensive in nature and will require necessary, self-directed study to achieve objectives.* It will be incumbent on the adult learner to engage not only the required texts but draw upon their previous learning and seek out additional resources as needed.

Knowing the anatomy of the head and neck as related to local anesthesia is of paramount import. One of the goals of the course is to avoid the complications of local anesthesia of the oral cavity associated with anatomical considerations for each type of injection and integrate the knowledge about the anatomy into the administration of local anesthesia and control of pain during dental procedures. This course will discuss the target areas, injection sites, depth of injections, signs of anesthesia, and commonly encountered complications when using local anesthetic injections for the oral cavity.

Students should have on file with the Dental Hygiene Program the following:

- Proof of liability insurance
- Proof of current CPR (Healthcare Provider)
- Proof of Hepatitis vaccination or signed refusal form
- Signed copy of confidentiality agreement
- Signed copy of management of puncture wounds and health insurance policies form.
- Signed copy of responsibility statement.

GENERAL AND SPECIFIC COURSE OBJECTIVES

After taking this course, the learner should be able to achieve the following general objectives:

- Demonstrate an understanding of the basic principles of local anesthesia and nitrous oxide sedation.
- Effectively anesthetize patients with local pharmacologic agents.
- Effectively consciously sedate patients with nitrous oxide.
- Accurately document agents used for conscious sedation and/or local anesthesia in patient records.

Specific student expected outcomes:

- It is expected that students will learn the importance of pain control in dentistry and be able to achieve anesthesia on a variety of patients.
- Students will be required to administer and monitor nitrous oxide/oxygen to effectively provide conscious sedation to patients.
- Students will also be required to achieve anesthesia on a patient partners* at the following injections sites:
 - PSA-Posterior Superior Alveolar
 - MSA-Middle Superior Alveolar
 - ASA-Anterior Superior Alveolar
 - GP-Greater Palatine
 - NP-Nasopalatine
 - IAN/L-Inferior Alveolar Nerve/Lingual
 - LB-Long Buccal
 - INC-Incise

* *Participants in this course will be expected to be engaged as both operator and patient, unless a medical condition precludes the safe administration of local anesthesia. If you are unable to participate as a patient partner during the clinical portion, you must provide a replacement patient.*

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Specific course objectives as related to local anesthesia include but are not limited to the following.

After taking the course the learner should be able to:

- Discuss the neurophysiology of pain and pain control.
- Describe the physiological mechanism of nerve conduction and how local anesthetic agents prevent impulse transmission.
- Understand pharmacology of local anesthetic agents and vasoconstrictors used in dentistry.
- Describe the neuroanatomy of the trigeminal nerve including its divisions.
- List the tissues anesthetized by each injection and describe the target areas.
- Locate and identify pertinent anatomical structures used to determine the syringe needle's penetration site for maxillary and mandibular injections on a skull and patient.
- Prepare and then demonstrate the correct placement of topical anesthetic.
- Assemble armamentarium and correct needle for various types of injections.
- Demonstrate correct use of local anesthetic armamentarium.
- Perform a physical and psychological evaluation with emphasis on patients to receive local anesthesia.
- Calculate the dosage used for various local anesthetic regimens.
- Calculate the maximum safe dose of local anesthetic agents and vasoconstrictors for individual patients.
- Identify and demonstrate the correct depth and tissues penetrated by the local anesthetic needle for each type of injection.
- Discuss and avoid the local complications of local anesthesia of the oral cavity.
- Describe the systemic complications that may occur with the administration of anesthesia.
- Discuss the management of local and systemic complications that may occur with the administration of local anesthesia.
- Safely and effectively administer various infiltrations and blocks as noted previous.
- Apply principles of infection control and safety before, during and after delivery of local anesthesia.
- Integrate the knowledge about local anesthesia into the administration of local anesthesia and control of pain during dental procedures.

Specific course objectives as related to nitrous oxide analgesia include but are not limited to the following.

After taking the course the learner should be able to:

- Understand the basic pharmacology of nitrous oxide/oxygen conscious sedation.
- List the beneficial and adverse effects of nitrous oxide/oxygen conscious sedation.
- Discuss the equipment used in nitrous oxide/oxygen administration.
- Administer and monitor nitrous oxide/oxygen in dental situations, stressing the titration method, including record keeping of its use.
- Discuss the three phases in administering nitrous oxide/oxygen conscious sedation.
- Summarize the control of nitrous oxide/oxygen in the dental operatory.
- Apply principles of infection control and safety before, during and after delivery of nitrous oxide.
- Discuss of the indications, contraindications and complications associated with use of nitrous oxide.

Specific course objectives as related to nitrous oxide analgesia (continued):

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- Discuss the potential biohazards for health personnel associated with chronic exposure to nitrous oxide.
- Relate the problems associated with the use of nitrous oxide and its potential for abuse.
- Summarize recommendations and preventive measures to control overexposure of nitrous oxide.
- Be familiar with legal issues concerning nitrous oxide administration for dental auxiliaries.

DH 309 course competencies as related to Commission on Dental Accreditation Core Competencies for Dental Hygiene Programs- Written statements describing the levels of knowledge, skills and values expected of graduates. This course and the aforementioned objectives will/should contribute significantly to the student in achieving either directly and or indirectly the following competencies:

Core Competencies (C)

C.1 Apply a professional code of ethics in all endeavors.

C.2 Adhere to state and federal laws, recommendations, and regulations in the provision of dental hygiene care.

C.3 Provide dental hygiene care to promote patient/client health and wellness using critical thinking and problem solving in the provision of evidence-based practice.

C.5 Assume responsibility for dental hygiene actions and care based on accepted scientific theories and research as well as the accepted standard of care.

C.10 Provide accurate, consistent, and complete documentation for assessment, diagnosis, planning, implementation, and evaluation of dental hygiene services.

C.11 Provide care to all clients using an individualized approach that is humane, empathetic, and caring.

Health Promotion and Disease Prevention (HP)

HP.6 Evaluate and utilize methods to ensure the health and safety of the patient/client and the dental hygienist in the delivery of dental hygiene.

Patient/Client Care (PC)

Assessment

PC.1 Systematically collect, analyze, and record data on the general, oral, and psychosocial health status of a variety of patients/clients using methods consistent with medico-legal principles. Specifically sections:

- c. Obtain, review, and update a complete medical, family, social, and dental history.
- d. Recognize health conditions and medications that impact overall patient/client care.
- e. Identify patients/clients at risk for a medical emergency and manage the patient/client care in a manner that prevents an emergency.

Implementation

PC.4 Provide specialized treatment that includes preventive and therapeutic services designed to achieve and maintain oral health. Assist in achieving oral health goals formulated in collaboration with the patient/client. This competency includes:

- b. Control pain and anxiety during treatment through the use of accepted clinical and behavioral techniques.

Evaluation

PC.5 Evaluate the effectiveness of the implemented clinical, preventive, and educational services and modify as needed. This competency includes:

- b. Evaluate the patient's/client's satisfaction with the oral health care received and the oral health status achieved.

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TEACHING METHODOLOGIES

Topics addressed in this course will have assigned readings and accompanying lectures will be provided corresponding to various modules of studies. PowerPoint presentations along with video instruction and of hands-on training will be utilized. Laboratory work will be both independent, self-directed exercises along with interactive group exercises. Clinical training will consist of faculty supervised sessions employing techniques described in the reading and lecture and supplemented by video. A Blackboard website will be utilized to provide communication, announcements, and posting of supportive materials for the course.

METHOD OF EVALUATION AND GRADING CRITERIA

A review exam on medical emergencies is necessary with new term of study and will be required with 86% or better either prior to first day of class or at a time designated by the instructor. Appropriate written examinations/assessments will be administered to determine the extent to which course objectives are being fulfilled. Students may also be evaluated with practical exams.

GRADING POLICY

- A. In keeping with departmental policy, **students will be required to obtain a letter grade of C or better.**

The grading scale for this course is as follows:

A = 92 – 100

D = 65 – 73

B = 83 – 91

F = 0 - 64

C = 74 - 82

- B. The final grade will be derived from the following areas with assigned weighted % of each item with total of 100%:
- a. 0% - A required pre-course medical emergencies review exam must be completed with a score of 86% or better.
 - b. 5% - Course participation[§] (See Note Below) (attendance and active participation)-students will be required to work as operator and patient-*(Participants in this course will be expected to be engaged as both operator and patient, unless a medical condition precludes the safe administration of local anesthesia. If you are unable to participate as a patient partner during the clinical portion, you must provide a replacement patient.)*
 - c. 15% -Laboratory exercises & Homework
 - d. 15% - Quizzes
 - e. 25% - Clinical process evaluations consisting of the following:
 - i. **Two** process evaluations and **one** competency per eight assigned injections
 - 1. Competency score on 1st attempt will be used; however, competency must be passed without any critical errors and have adequate score, therefore additional attempt(s) will be needed, until competency achieved.
 - ii. **Two** process evaluations regarding nitrous oxide/oxygen administration
 - iii. **One** process evaluation regarding topical anesthesia.
 - f. 40% - Final Comprehensive Examination***

PLEASE NOTE:

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§- attendance at all sessions is required. It is assumed that required assignments (readings, etc.) will be completed prior to class. Students **must** come prepared with consideration of the days' scheduled events. *** (A score of 75% or better on written Final Examination must be achieved for certification by Kentucky Board of Dentistry- in the event you earn below a 75% on the final exam, see instructor for remediation and post-test instructions. If the student passes the course but fails to score 75 or better on the final exam- after meeting with instructor for remediation and post-test instructions, they can retake the exam on the next working day following the initial exam.)

- Make-up **exams** will be given at the discretion of course director.
- There will be ***no make-up for quizzes.***

*****Note for all current students in the WKU Dental Hygiene program*****

In addition to the above course requirements-Awarding of Certification for LA/Nitrous for students enrolled in the WKU Dental Hygiene program will only be given upon successful completion of all clinic related items remaining in the program, specifically those requirements encountered in DH 370 and DH 371. I.e., once graduation requirements are complete then you will be eligible to apply for Local Anesthesia/Nitrous certificate from the Kentucky Board of Dentistry or other Dental State Boards.

EXAMPLE OF HOW TO CALCULATE GRADE

	Student's Raw Score	Possible points	% grade	Weighted points	Points possible
Medial emergency review exam	78	90	86.67	0	0
Participation Grade ^s	15	15	100.00	5.00	5
Lab assignments/Homework	135	150	90.00	13.5	15
Quizzes	38	50	76.00	11.40	15
Clinical Competencies	95	100	95.00	23.75	25
Final exam	45	60	75.00	30.00	40
Attendance	14/15			-2	
totals				83.65	100
Final Grade				81.65	

Therefore, a letter grade of C would be earned and Certification requirement for Final Exam fulfilled.

EXAMINATION POLICY

Students are expected to take the exams and or quizzes when scheduled. In the event that the student is unable to do so, the instructor **must** be called prior to the exam time. If an exam is missed, it may be made up only at the discretion of the instructor and then only after a valid, (and if necessary, a documented) excuse (e.g. hospitalization, illness, funeral of immediate family member) is presented. If a test/exam is missed, it may be made up only at the discretion of the instructor after a valid, documented is presented. Make-up tests/exams will not be given for travel, vacations, personal social events, etc. Failing to take a test/examination without a valid, documented excuse will result in a grade of zero for the test/examination.

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ATTENDANCE POLICY

Due to the nature of this course, attendance is crucial to learning outcomes. Students will be expected to attend all class sessions. In the event that the student is unable to attend, the instructor **must** be contacted prior to the class time. In case of illness, please contact the Dental Hygiene/Allied health office associate at 270.745.2427 or the instructor before scheduled class begins. Any anticipated absences **must** be reported **prior** to the absence to the course coordinator or Program Director. Be prepared to present a doctor's excuse if requested. Failure to communicate in the above manner may result in the student not being allowed to make up any missed work. As noted above, attendance is crucial to learning outcomes, and due to the time parameters of meeting daily, this course requires attendance at all class sessions, thus **each absence, in excess of course requirements will result in a two-point reduction from the final grade.** Extenuating circumstances may be considered after being reviewed by the Dental Hygiene Program Director and the course instructor of record. Students wishing to claim extenuating circumstances will be asked to provide documentation of the condition which led to excessive absenteeism. The presence of extenuating circumstances does not guarantee that a student will be exempted from this attendance policy.

Tardiness in the clinical setting/laboratory will not be tolerated. Clinical/laboratory experience is essential for student fulfillment of program and course objectives. Habitual tardiness is considered unprofessional, thus tardiness may result in the student not being admitted to the clinical/laboratory, which may be counted as an absence. Admittance to the clinical setting/laboratory in the event of tardiness for exceptional circumstances will be at the discretion of the instructor. Students arriving late to class will not be allowed to take quizzes that have been initiated. If you are unable to attend a class session for other than reason of illness, you must talk to the instructor. The instructor will determine if the absence is to be considered an excused absence or unexcused absence.

Any absence from clinical or laboratory sessions will require make up assignments to be assigned at the course faculty's discretion. Regardless of the absence status, each student is responsible for all class material and makeup of any assignments missed during the absence.

PROFESSIONAL BEHAVIOR & CLASS COURTESY EXPECTATIONS

Professional behavior is an expectation of all those present in the classroom. This includes respect for faculty while presenting content and respect for students while presenting content or voicing an opinion. No foul language will be tolerated.

LABORATORY RULES

- Lab Materials are not to be removed from the program of dental hygiene without permission of an instructor.

CLINICAL RULES

- All policies related to Ethics/Professionalism, Empathy/Patient Management and Professional Appearance will be adhered too. Professional deportment and appearance, effective utilization of time, and equipment maintenance will be adhered to according to the criteria established in the Dental Hygiene Manual (see page 30 and following). Repeated infractions could result in dismissal from clinic. Clinic time is to be treated just like a routine patient clinic time.
- **Clinic attire should be worn on days scheduled for clinic.**

CLASSROOM RULES FOR FACE-TO-FACE CLASSES

- Attendance: Students are expected to be present, punctual, and attentive for the classroom period.

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- o Tardiness: Students are expected to arrive prior to the start of class, to avoid disrupting the classroom. Students who arrive after class begins may be asked to wait until break to enter the classroom.
- o Class Preparation: Students are expected to read the assignments before coming to class and are responsible for information presented.
- o Beverages: Beverages brought into the classrooms should be covered with a lid. Any spills will be the responsibility of the student to clean up.
- o Cell Phones: Turn off or place phones on vibrate mode while in the classroom.
- o Laptop Computers: Computers may only be used in the classroom for note taking and/or other activities related to the course.
- o Other Possible Distractions: Children, pets, friends, parents, significant others, etc. are not permitted to attend classes.
- o Audio Recording: Students may audio record classroom content. The purpose of audio recording in the classroom is to enhance student learning. In order to preserve patient confidentiality, recorded content is restricted to dental hygiene student use only and may not be shared with others, nor published on social media outlets. Violation of confidentiality will result in a professional misconduct warning or dismissal from the dental hygiene program. Faculty reserve the right to prohibit audio recording if it becomes distracting or disruptive. This policy does not apply to guest speakers, as we must first seek permission to audio record their presentations.
- o The faculty reserve the right to ask any student to halt behaviors that are viewed as disruptive and will ask the student to leave the classroom if the behavior continues.

INCLEMENT WEATHER- in case of inclement weather, you are responsible for listening to the local television and/ or radio stations for information regarding school closings or delayed schedules. Unless school is officially closed, we will meet. Any days or times missed to inclement weather will be made up at semester's end or where schedule allows. If a late opening is declared, all didactic classes will begin at the designated hour. If the late opening occurs during a scheduled class time, the class will meet for the time remaining. Any assignments scheduled during those missed classes, such as an exam or paper, are due at the next class meeting unless other instructions are posted at the course website or via Email.

WKU SYLLABUS STATEMENT ON COVID-19

All students are strongly encouraged to [get the COVID-19 vaccine](#). Out of respect for the health and safety of the WKU community and in adherence with CDC guidelines and practices of all public universities and colleges in [Kentucky](#), the University requires that a cloth face covering (reusable or disposable) that covers both the nose and mouth must be worn at all times when in public areas within all buildings. Students must properly wear face coverings while in class regardless of the room size or the nature of the classroom activities. Students who fail to wear a face covering as required will be in violation of the WKU Student Code of Conduct and will be asked to comply or will face disciplinary action, including possible dismissal from the University. Accommodations can be requested in special cases through the Student Accessibility and Resource Center ([SARC](#)): [270-745-5004](#) (voice), [270-745-3030](#) (TTY), or [270-288-0597](#) (video).

All students must immediately report a positive Covid-19 test result or close contact with a person who has tested positive to the Covid-19 Assistance Line at 270-745-2019. The assistance line is available to answer questions regarding any Covid-19 related issue. This guidance is subject to change based on requirements set forth by public health agencies or the office of the governor. Please refer to the Healthy on the Hill website for the most current information. www.wku.edu/healthyonthehill

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ADA ACCOMMODATION

In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, 1074. SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a Faculty Notification Letter (FNL) from The Student Accessibility Resource Center

TITLE IX/ DISCRIMINATION AND HARASSMENT POLICY

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's [Sex and Gender-Based Discrimination, Harassment, and Retaliation](#) (#0.070) and [Discrimination and Harassment Policy](#) (#0.2040). Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's [Counseling and Testing Center](#) at 270-745-3159.