



INSTRUCTIONAL PACKAGE

DHG 241
Integrated Dental Hygiene I

Effective Term
Fall 2024/Spring 2025/Summer 2025

INSTRUCTIONAL PACKAGE

Part I: Course Information

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: DHG 241

COURSE TITLE: Integrated Dental Hygiene I

CONTACT HOURS: 1

CREDIT HOURS: 1

RATIONALE FOR THE COURSE:

DHG 241 will help students interpret evidence-based research. They will also gain the skills and knowledge necessary to monitor Nitrous Oxide/Oxygen Sedation.

COURSE DESCRIPTION:

This course provides for the integration of the basic and dental hygiene sciences with current concepts of clinical dental hygiene practice.

PREREQUISITES:

AHS 113 Head and Neck Anatomy
BIO 211 Anatomy Physiology II
BIO 225 Microbiology
DHG 125 Tooth Morphology and Histology
DHG 151 Dental Hygiene Principles
DHG 121 Dental Radiography
DHG 141 Periodontology
DHG 165 Clinical Dental Hygiene I
DHG 243 Nutrition
SPC 205 Public Speaking
DHG 175 Clinical Dental Hygiene II
DHG 239 Dental Assisting for Dental Hygienists
PSY 201 General Psychology

CO-REQUISITES:

DHG 140 General and Oral Pathology
DHG 143 Dental Pharmacology
DHG 230 Public Health Dentistry
DHG 255 Clinical Dental Hygiene III

REQUIRED MATERIALS:

Please visit the [BOOKSTORE](#) online site for most current textbook information. Use the direct link below to find textbooks.

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

TECHNICAL REQUIREMENTS:

Access to Desire2Learn (D2L), HGTC's learning management system (LMS) used for course materials.

Access to myHGTC portal for student self-services.

College email access – this is the college's primary official form of communication.

STUDENT IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to participate in a minimum of one (1) proctored assignment and/or one (1) virtual event to support student identification verification. Please refer to your Instructor Information Sheet for information regarding this requirement.

CLASSROOM ETIQUETTE:

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

*Refer to the HGTC Dental Sciences Program Manual for additional policies on classroom etiquette.

NETIQUETTE: is the term commonly used to refer to conventions adopted by Internet users on the web, mailing lists, public forums, and in live chat focused on online communications etiquette. For more information regarding Netiquette expectations for distance learning courses, please visit [Online Netiquette](#).

Part II: Student Learning Outcomes

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

1. Define and discuss the physical and chemical properties of nitrous oxide and oxygen.
2. Identify the main components of N₂O-O₂ delivery systems.
3. Demonstrate a basic understanding of the proper maintenance of N₂O-O₂ equipment to include infection control procedures, common malfunctions, and appropriate corrections and precautions for safe use.
4. Identify and respond to signs and symptoms of N₂O-O₂ over-sedation.
5. Identify potential effects of N₂O abuse.
6. Calculate and record accurate percentages of N₂O-O₂ delivered.
7. Describe and discuss contraindications and indications for N₂O-O₂ sedation.
8. Describe the effects of N₂O on the central nervous system (CNS), gastrointestinal system (GI), and the cardiovascular system.
9. Demonstrate the steps in administration of N₂O-O₂ sedation.

10. Utilize science-based research to prepare and present poster boards to the dental community.
11. Identify signs and symptoms of abuse and neglect and how to it is reported.

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

Module 1

Materials Covered: Handout on table clinic expectations and HGTC Library presentation on evidence-based research.

Assessments: Competency, Tests, Table Clinic

Objectives:

1. Discuss how to identify evidence-based research.
2. Outline the format of a table clinic poster board.
3. Learn how to format a brochure for table clinic presentations.

Module 2

Materials Covered: *Nitrous Oxide Oxygen Sedation*: Ch. 1 Discovery, History, and Evolution of N₂O/O₂ Sedation, Ch. 2 Guidelines for Best Practice, Ch. 3 Pain and Anxiety Management, Ch. 4 Desirable characteristics of N₂O/O₂ Sedation

Assessments: Competency, Tests

Objectives

1. Understand the significance of the discovery of nitrous oxide and oxygen.
2. Recognize the paucity of pain control in the early nineteenth century.
3. Appreciate the foresight and ingenuity of Horace Wells as the individual responsible for recognizing the aesthetic value of N₂O.
4. Appreciate the evolutionary path of N₂O to its current place in the spectrum of analgesia and sedation options.
5. Recognize the historical safety record of nitrous oxide/oxygen (N₂O/O₂) sedation.
6. Recognize current practice guidelines established for non-anesthesiologists working in an ambulatory setting.
7. Formulate an initial understanding of the virtuous characteristics of N₂O/O₂ sedation.
8. Identify the physiologic mechanism of pain.
9. Recognize methods for assessing and measuring pain.
10. Appreciate the relationship between pain and anxiety.
11. Recognize methods for assessing and measuring fear and anxiety.
12. Recognize the spectrum of pain and anxiety management options.
13. Identify the analgesic properties of nitrous oxide (N₂O)/oxygen (O₂) sedation.
14. Identify the anxiolytic properties of N₂O/O₂ sedation.
15. Identify the amnestic effect when using N₂O/O₂ sedation.
16. Describe the onset of action.
17. Discuss the advantage of N₂O/O₂ sedation with regard to the ability to titrate the drug.
18. Identify the recovery process following N₂O/O₂ sedation.
19. Recognize the process of N₂ elimination from the body.

20. Appreciate the well-documented acceptance of N₂O/O₂ sedation.
21. Recognize other methods of patient management that are combined with N₂O and O₂ and discuss the advantages and disadvantages of each.

Module 3

Materials Covered: *Nitrous Oxide Oxygen Sedation*: Ch. 5 Physical Properties and Pharmacokinetics/Pharmacodynamics of N₂O, Ch. 6 Manufacturing and Distribution of N₂O/O₂ and O₂ Gases, Ch. 7 Delivery of N₂O/O₂ Sedation

Assessments: Competency, Tests

Objectives:

1. Recognize physical and chemical properties of nitrous oxide (N₂O)
2. Recognize physical and chemical properties of oxygen (O₂)
3. Discuss the pharmacokinetic properties of N₂O.
4. Discuss the pharmacodynamic properties of N₂O.
5. Understand the simplicity of nitrous oxide (N₂O) manufacturing process.
6. Recognize the primary users of N₂O.
7. Recognize the regulatory agencies responsible for the oversight of N₂O.
8. Identify how N₂O is stored.
9. Identify properties of nitrous oxide (N₂O) and oxygen (O₂) cylinders.
10. Appreciate the history and evolution of nitrous oxide (N₂O) /oxygen (O₂) sedation delivery equipment.
11. Understand the differences between a central gas and portable supply system.
12. Identify each component and its purpose in the N₂O/O₂ sedation delivery system.
13. Recognize variations of N₂O/O₂ sedation delivery systems.
14. Identify the safety features found on the N₂O/O₂ sedation delivery system.

Module 4

Materials Covered: *Nitrous Oxide Oxygen Sedation*, Ch. 8 Anatomy and Physiology of Respiration and Airway Management, Ch. 9 N₂O and Its Interaction with the Body, Ch. 10 Patient Assessment

Assessments: Competency, Tests

Objectives:

1. Review the anatomy of the upper and lower airways.
2. Recognize the potential for airway obstruction.
3. Review acceptable airway management techniques.
4. Appreciate the critical gas exchange across pressure gradients with nitrous oxide (N₂O).
5. Identify the role of additional monitoring devices, such as pulse oximetry and capnography, in N₂O/oxygen (O₂) sedation.
6. Recognize the clinical significance of diffusion hypoxia in N₂O/O₂ sedation.
7. Describe how to manage patient in the category of moderate sedation (>50% N₂O)
8. Identify the interaction of nitrous oxide with body systems.
9. Identify how nitrous oxide interacts with patients who have other health issues that could impact the sedation experience.

10. Appreciate the value of patient health history information.
11. Recognize the ASA Physical Status Classification System as a method of categorizing patient health.
12. Identify the component included in a preprocedural patient evaluation for N₂O/O₂ sedation.
13. Recognize measures for patient preparation before N₂O/O₂ sedation.
14. Understand the necessity for patient monitoring during N₂O/O₂ sedation.
15. Recognize the monitoring procedures associated with N₂O/O₂ sedation.
16. Recognize the importance of emergency preparedness in terms of personnel preparation and necessary equipment.

Module 5

Materials Covered: *Nitrous Oxide Oxygen Sedation* Ch. 11 Titration of N₂O/O₂ Gases, Ch. 12 Signs and Symptoms of N₂O/O₂ Sedation, Ch. 13 Technique for N₂O/O₂ Administration and Assessment of Recovery

Assessments: Competency, Tests

Objectives:

1. Define titration as a method of drug administration.
2. Understand the significance of titration.
3. Understand the concept of individual biovariability.
4. Recognize the advantages of the ability to adjust sedation levels using nitrous oxide (N₂O)/oxygen (O₂) sedation.
5. Understand the fundamental principles of appropriate N₂O/O₂ sedation.
6. Discuss general unit preparation activities before N₂O/O₂ administration.
7. Understand how to activate N₂O/O₂ sedation equipment.
8. Describe measures taken to prepare the patient before N₂O/O₂ sedation.
9. Describe the technique steps for the appropriate administration of N₂O/O₂ sedation.
10. Understand the principles of recovery.
11. Describe the psychologic and psychomotor effects of N₂O/O₂ sedation recovery.
12. Recognize the appropriate technique for assessing adequate recovery from N₂O/O₂ sedation.
13. Recognize the signs and symptoms of adequate N₂O/O₂ sedation recovery.
14. Understand how individual biovariability affects N₂O/O₂ sedation recovery time.
15. Recognize appropriate sterilization and disinfection procedures for N₂O/O₂ sedation equipment.
16. Recognize important documentation procedures associated with N₂O/O₂ sedation.

Module 6

Materials Covered: *Nitrous Oxide Oxygen Sedation*, Ch. 14 Multidisciplinary Application of N₂O/O₂ Sedation, Ch. 15 N₂O/O₂ Sedation in Pediatric Dentistry, Ch. 16 Potential Biohazards for Health Personnel Associated with Chronic Exposure to N₂O, Ch. 17 Nitrous Oxide Abuse Issues

Assessments: Competency, Tests

1. Appreciate the myriad of disciplines using nitrous oxide (N₂O)/oxygen (O₂) sedation for patient care and treatment.
2. Recognize how N₂O/O₂ sedation can be used for a wide variety of procedures.
3. Recognize stages of child development according to Piaget.
4. Appreciate the guidance from the AAP and the AAPD regarding nitrous oxide (N₂O)/oxygen (O₂) administration.
5. Appreciate how N₂O/O₂ sedation is used with children in various disciplines.
6. Recognize patient considerations related to working with children.
7. Understand the difference between rapid induction versus the titration method for administration of N₂O/O₂ sedation in children.
8. Understand safety considerations associated with pediatric patients and N₂O/O₂ sedation.
9. Understand the steps for administration of N₂O/O₂ sedation in pediatric dentistry.
10. Recognize specific biologic issues and health concerns associated with chronic exposure to nitrous oxide (N₂O).
11. Understand the history of N₂O literature and how it relates to the changes in its use and practice.
12. Identify methods for the detection and monitoring of trace N₂O gas in ambient air.
13. Understand what is meant by a nitrous oxide scavenging system.
14. Recognize best practice control measures to minimize trace N₂O.
15. Recognize common substances that are abused by inhalation.
16. Recognize the dangers of inhalant abuse.
17. Understand how nitrous oxide (N₂O) is abused.
18. Recognize the health hazards associated with chronic exposure to N₂O.
19. Understand how euphoric effects associated with N₂O abuse can be related to sexual phenomena.
20. Discuss the addictive nature of nitrous oxide.
21. Discuss legislation and regulation issues regarding the sale or purchase of N₂O.

Module 7

Materials Covered: *Nitrous Oxide Oxygen Sedation*, Ch. 18 Ethical and Legal considerations Regarding N₂O/O₂ Administration, Ch. 19 Frequently Asked Questions Regarding N₂O/O₂ Sedation, Ch. 20 Future trends in N₂O/O₂ Sedation

Assessments: Competency, Tests

1. Understand there are legal requirements for administering nitrous oxide (N₂O)/oxygen (O₂) sedation.
2. Recognize appropriate educational levels and training requirements for N₂O/O₂ administration.
3. Understand the importance of obtaining written informed consent before N₂O/O₂ sedation.
4. Recognize the components of appropriate informed consent for N₂O/O₂ sedation.
5. Identify the ethical principles associated with N₂O/O₂ sedation.

6. Identify ethical responsibilities associated with the administration of N2O/O2 sedation.
7. Identify appropriate practice guidelines for the administration of N2O/O2 sedation based on ethical and legal principles.

****Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*:

Students’ performance will be assessed and the weight associated with the various measures/artifacts are listed below.

EVALUATION*

Tests-3	30%(10% each)
Projects (Table Clinic)	50%
Professionalism	2%
Final Exam	18%
	100%

****Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

GRADING SYSTEM:

A=90-100

B=80-89

C=77-79

D=70-76

F=69 or lower

*Students must pass with a 77% or higher to continue in the DH Program.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes in order to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 - Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

For online and hybrid courses, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

Part V: Student Resources



THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

The SSTC offers to all students the following **free** resources:

1. **Academic tutors** for most subject areas, **Writing Center support**, and **college success skills**.
2. Online **tutoring** and academic support resources.
3. Professional and interpersonal communication **coaching** in the EPIC Labs.

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring, contact the SSTC at sstc@hgtc.edu or self-schedule in the Penji iOS/Android app or at www.penjiapp.com. Email sstc@hgtc.edu or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the [Online Resource Center](#) to access on-demand resources.



STUDENT INFORMATION CENTER: TECH Central

TECH Central offers to all students the following **free** resources:

1. **Getting around HGTC**: General information and guidance for enrollment, financial aid, registration, and payment plan support!

2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **Chat with our staff on TECH Talk**, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552.



HGTC LIBRARY:

Each campus location has a library where HGTC students, faculty, and staff may check out materials with their HGTC ID. All three HGTC campus libraries are equipped with computers to support academic research and related school work; printing is available as well. Visit the [Library](#) website for more information or call (843) 349-5268.

STUDENT TESTING:

Testing in an **online/hybrid** course and in **make-up exam** situations may be accomplished in a variety of ways:

- Test administered within D2L
- Test administered in writing on paper
- Test administered through Publisher Platforms (which may have a fee associated with the usage)

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

The **Instructor Information Sheet** will have more details on test requirements for your course.

DISABILITY SERVICES:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability Services staff will review documentation of the student's disability and, in a confidential setting with the student, engage in an interactive process to develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided. Students will need to reach out to the Accessibility and Disability Services staff each semester to renew their accommodations.

COUNSELING SERVICES:

HGTC Counseling Services strives to optimize student success through managing personal and academic concerns that may interfere with achieving educational goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to counseling@hgtc.edu or visit the website the [Counseling Services webpage](#).

STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation, in the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, tamatha.sells@hgtc.edu or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: OCR@ed.gov).

Other employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & the College's Affirmative Action/Equal Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5212, jacquelyne.snyder@hgtc.edu.

Other student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, melissa.batten@hgtc.edu.

TITLE IX REQUIREMENTS:

Title IX of the Education Amendments of 1972 protects students, employees, applicants for

admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement*.

*Faculty and Staff are required to report these incidents to the Title IX Coordinator when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, tamatha.sells@hgtc.edu.

PREGNANCY ACCOMMODATIONS

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the [Pregnancy Intake Form](#).