

HGTC

Horry-Georgetown
Technical College

COURSE INSTRUCTIONAL PACKAGE

DHG 241

Integrated Dental Hygiene I

Effective Term

Fall 2026

Part I: Course Information

Effective Term: Fall 2026

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/CO-REQUISITES:

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.

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.

ATTENDANCE VERIFICATION:

The Add/Drop Period is the first 7 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format classes. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all 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

IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to complete identity verification. Please refer to your Instructor's Course Information Sheet for information regarding this requirement.

STUDENT COURSE EVALUATIONS:

Each semester, students are provided with an opportunity to participate in course evaluation surveys. These evaluations offer crucial feedback to instructors and the College, leading to enhancement of educational quality. By completing these surveys, you play a key role in the ongoing improvement of teaching methods and course content, ensuring future students enjoy a better learning experience. Students are encouraged to complete these surveys as your active participation in this process reflects your dedication to your education and drives positive change.

CLASSROOM ETIQUETTE AND STUDENT RIGHTS AND RESPONSIBILITIES:

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 an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

To ensure a positive College experience, guidelines exist in numerous areas of campus life. The Student Code for The South Carolina Technical College System "The Student Code" (3-2-106.1) applies to all HGTC students. The Student Code sets forth rights and responsibilities of the individual student, identifies behaviors that are not consistent with the values of college communities, and describes the procedures that will be followed to adjudicate cases of alleged misconduct. Students are expected to conduct themselves in a civil manner, that is respectful of the rights of others, and that is compatible with the college's educational mission. Students are expected to comply with all of the college's duly established rules and regulations regarding student behavior while on campus; while participating in off-campus college sponsored activities; and while participating in off-campus clinical, field, internship, or in-service experiences. Students are expected to comply with all course requirements as specified by instructors in course syllabi and to meet the standards of acceptable classroom behavior set by instructors. For more information, login to your myHGTC account under "Student Rights and Responsibilities" card then select "Student Code of Conduct" or the "Student Catalog and Handbook."

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)
Homework/Quizzes	6%
Projects (Table Clinic)	50%
Professionalism	2%
Final Exam	12%
	100%

****Students, for the specific number and type of evaluations, assessments, and due dates, 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, and Is also negatively impact academic progression and financial aid status.

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 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, refer to your Instructor's Course Information Sheet for any required on-site meeting times. In online courses, attendance is fulfilled through the submission of academic work. Please be aware that instructors may require exams to be proctored either online or at an approved testing site. If you choose to use a testing center other than those provided by HGTC, that center may charge a fee for its services.

Part V: Student Resources



THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

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

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

Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring or coaching, 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 SSTC [Online Resource Center](#) to access on-demand resources.

STUDENT INFORMATION CENTER – TECH Central:



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

1. Getting around HGTC: General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. In-person and remote assistance are available for Desire2Learn, Student Portal, Degree Works, and Office 365.
3. 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. Visit the [Tech Central website](#) for more information. Live Chat and Center locations are posted on the website. You may also call (843) 349-5199.

**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 have librarians and staff who can aid with research, computers to support academic research and related school-work, and individual/group study rooms. Printing is available as well at each location. Visit the [Library](#) website for more information or call (843) 349-5268.

STUDENT TESTING:

Testing in HGTC courses may occur during regularly scheduled class time or online, with or without proctoring. Tests may be delivered in the following formats:

- Digitally through D2L
- In writing on paper
- Through a publisher platform (note: some publisher platforms carry an associated fee)

Tests may include time limits and may require proctoring depending on the course.

When proctoring is required and is not provided by the course instructor in the classroom, students may complete their test face-to-face at an [HGTC Testing Center](#) or another approved testing site, or online using HGTC's online proctoring provider. For more information about available proctoring options, visit the [Online Testing](#) section of the HGTC Testing Center webpage.

Students testing at an HGTC Testing Center should note the following:

- **Appointments must be scheduled at least 24 hours in advance.**
- **A physical, government-issued photo ID is required to test.**

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. Students seeking accommodations are encouraged to visit HGTC's [Accessibility and Disability Service webpage](#) for detailed information.

It is the student's responsibility to self-identify as needing accommodations and to provide appropriate documentation. Once documentation is submitted, the student will participate in an interactive process with Accessibility and Disability Services staff to determine reasonable accommodations. Students may begin the accommodations process at any time; however, accommodations are **not retroactive** and will only be applied from the point at which they are approved. Students must contact the office **each semester** to renew their accommodations.

For assistance, please contact the Accessibility and Disability Services team at disabilityservices@hgtc.edu or 843-796-8818 (call or text).

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:

Our sincere commitment to both effective business management and equitable treatment of our employees requires that we present this Policy Statement as an embodiment of that commitment to the fullest.

Discrimination is conduct that includes unjust or prejudicial treatment based upon an individual's age, race, color, sex, religion, national origin, disability, and genetic information or any other protected classes deemed unlawful under State or Federal law that excludes an individual from participation in, denies the individual the benefits of, treats the individual differently, or otherwise adversely affects a

term or condition of a person's working or learning environment. This includes failing to provide reasonable accommodation, consistent with state and federal law, to persons with disabilities.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Jen Riddei, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 HWY 501 E, PO Box 261966, 843-349-5218, Jenifer.Riddei@hgtc.edu.

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, and Section 504 & Title II Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 HWY 501 E, PO Box 261966-6066, 843-349-5228, Melissa.Batten@hgtc.edu.

Employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Synder, Vice President, Human Resources and Employee Relations and 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.

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 sexual harassment, 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).

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Jen Riddei, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 HWY 501 E, PO Box 261966, 843-349-5218, Jenifer.Riddei@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* that can be found [here](#).