

**EXAM INFORMATION****Items**

53

Points

88

Prerequisites

NONE

Grade Level

12

Course Length

ONE SEMESTER

Career Cluster

HEALTH SCIENCE

NCHSE HEALTH SCIENCE BUNDLE

Performance Standards

INCLUDED

Certificate Available

YES

DESCRIPTION

The first assessment in a series, Dental Science I prepared students to assist a dentist or dental hygienist performing the functions of a dental practice. Topics include: chairside assisting, patient preparation, front office functions, selected dental office laboratory procedures, and introduction to radiology.

EXAM BLUEPRINT**STANDARD****PERCENTAGE OF EXAM**

1- Dentistry Field	13%
2- Dental Office & Equipment	10%
3- Behavior	7%
4- OSHA & CDC Guidelines	5%
5- Infection Control	9%
6- Anatomy	26%
7- Oral Disease	10%
8- Preventive Dentistry Program	1%
9- Front Office	14%
10- Life Support Skills	5%



STANDARD I

STUDENTS WILL EXAMINE THE FIELD OF DENTISTRY

- Objective 1** Identify the important contributions of the following people to the field of dentistry.
1. G. V. Black – Grand Old Man of Dentistry
 2. Wilhelm Conrad Roentgen – discovered potential of x-ray beam
 3. C. Edmund Kells – employed the first dental assistant
 4. Pierre Fauchard – Father of Modern Dentistry
 5. Horace Wells – use of nitrous oxide for relief of dental pain
 6. Paul Revere – first forensic dentist
 7. Ida Gray-Rollins – first African American woman to earn a formal DDS degree
 8. Emeline Roberts Jones – first woman to establish a regular dental practice in the U.S.
 9. Malvina Cueria – first female dental assistant
 10. Irene Newman – first dental hygienist
 11. Lucy B. Hobbs-Taylor – first female graduate of a dental school
 12. Juliette A. Southard – founded American Dental Assistant’s Association
- Objective 2** Describe the following dental health team members (including educational requirements, professional organizations, responsibilities, and licensure).
1. Dentist
 2. Dental Hygienist
 3. Dental Assistant
 4. Administrative Assistant
 5. Dental Laboratory Technician
- Objective 3** Describe the following areas of specialization in dentistry.
1. Dental Public Health
 2. Endodontics
 3. Oral & Maxillofacial Radiology
 4. Oral & Maxillofacial Surgery
 5. Oral Pathology
 6. Orthodontics
 7. Pediatric Dentistry
 8. Periodontics
 9. Prosthodontics
- Objective 4** Describe the characteristics of a professional dental assistant.
1. Professional appearance
 2. Teamwork
 3. Attitude
 4. Dedication
 5. Responsibility
 6. Initiative
 7. Confidentiality
 8. Personal qualities
- Objective 5** Identify professional work habits.
1. Courtesy and respect for patients and team members
 2. Attendance of work hours



3. Professional communication (grammar)
4. Team work
5. Problem solving

- Objective 6 Outline methods for helping patients feel comfortable before, during, and after treatment.
- Objective 7 Explain patient confidentiality.
- Objective 8 Describe communication with patients including telephone, special needs patients, and team members.
- Objective 9 Demonstrate professional appearance, hygiene, dental health, and behaviors

STANDARD 2

STUDENTS WILL IDENTIFY AREAS OF THE DENTAL OFFICE AND BASIC DENTAL EQUIPMENT

- Objective 1 Identify and describe the following areas of the dental office.
1. Dental Operatory (treatment area)
 2. Reception Area
 3. Administration/Business Area
 4. Sterilization Area
 5. Dental Laboratory
 6. Dentist's Private Office
 7. Consultation Room
 8. Dental Staff Lounge
- Objective 2 Identify and describe proper use and maintenance of the following clinical equipment.
1. Operator Stool
 2. Assistant Stool
 3. Dental Chair
 4. Operating Light
 5. Air water syringe
 6. Oral evacuation system
 7. Curing light
 8. Amalgamator
 9. Rheostat (foot control)
 10. X-ray systems
- Objective 3 Outline basic morning & evening routines.

STANDARD 3

STUDENTS WILL DEMONSTRATE AN UNDERSTANDING OF APPROPRIATE ETHICAL AND LEGAL BEHAVIOR IN A DENTAL SETTING

- Objective 1 Define the difference between ethics and laws, including the importance of professional and personal ethics in the workplace.
- Objective 2 Discuss ethical and legal responsibilities for the dental healthcare worker.
- Objective 3 Identify standards of the Health Insurance Portability and Accountability Act/HIPAA and discuss the need to protect the patient's privacy.



- Objective 4 Explain the purpose of the state dental practice act and how it applies to the role of the dental assistant.
- Objective 5 Discuss the role of the dental assistant in recognizing and reporting domestic violence, neglect, and child abuse.

STANDARD 4

STUDENTS WILL DEMONSTRATE PERSONAL SAFETY PROCEDURES BASED ON OSHA AND CDC GUIDELINES

- Objective 1 Outline the Centers for Disease Control and Prevention guidelines and identify components of a written exposure control plan.
- Objective 2 Explain the OSHA Bloodborne Pathogen Standard, including:
 - 1. Training requirements
 - 2. Employee medical records
 - 3. Exposure protocol
- Objective 3 Demonstrate proper use of PPE and correct hand washing technique.
- Objective 4 Outline the OSHA Hazard Communication Standard, including:
 - 1. Training program
 - 2. Chemical inventory
 - 3. Locate OSHA posters and MSDS sheets on site

Standard 4 Performance Evaluation included below (Optional)

STANDARD 5

STUDENTS WILL DEMONSTRATE INFECTION CONTROL PROTOCOL

- Objective 1 Identify methods of disease transmission, including chain of infection and modes of transmission in the dental office.
- Objective 2 Obtain Hepatitis B vaccination or provide signed declination form.
- Objective 3 Outline standards for prevention of disease transmission.
 - 1. Prevent cross contamination
 - 2. Maintain aseptic conditions
- Objective 4 Waste disposal.
- Objective 5 Perform sterilization procedures. Know chemicals and methods used for sterilization and the purpose of sterilization.
- Objective 6 Perform disinfection procedures. Know chemicals and methods used for disinfection and the purposes of disinfection

Standard 5 Performance Evaluation included below (Optional)



STANDARD 6

STUDENTS WILL IDENTIFY INTRA-ORAL ANATOMY AND SURROUNDING STRUCTURES

- Objective 1 Identify teeth by name; location; and permanent, primary, or mixed dentition.
- Objective 2 Identify anatomical parts, tissues, and surfaces of a tooth.
- Objective 3 Identify supporting structures (periodontal ligaments, alveolar bones, gingival, and cementum).
- Objective 4 Identify primary and permanent teeth using the Universal Tooth Numbering System.
- Objective 5 Identify major landmarks of the oral cavity and surrounding structures (maxillary sinus, salivary glands and ducts, maxilla, mandible, TMJ, incisive papilla, rugae, uvula, frenulums, soft palate, hard palate, tongue, teeth, oral mucosa, gingival tissue, temporal bone, and trigeminal nerve).
- Objective 6 Describe genetic and developmental factors that can affect dental development (tori, geographic tongue, fissure tongue, supernumerary, enamel dysplasia, cleft palate, cleft lip, tongue-tied, anodontia, microdontia, and macrodontia).

STANDARD 7

STUDENTS WILL IDENTIFY THE INFECTIOUS PROCESS OF DENTAL CARIES AND OTHER DISEASES OF THE ORAL CAVITY

- Objective 1 Outline the dental caries process.
 - 1. Acids in plaque and saliva attack the tooth.
 - 2. Calcium and phosphate are dissolved from the enamel (demineralization).
 - 3. Fluoride, calcium, and phosphate are re-deposited into the tooth (remineralization).
- Objective 2 Describe the clinical characteristics of gingivitis (red, swollen gingival tissues that bleed easily).
- Objective 3 Recognize the diseases/conditions of the oral cavity, including oral cancer, candidiasis (thrush), cellulitis, conditions of the tongue (fissured tongue, geographic tongue, and glossitis), and herpes.
- Objective 4 Identify the effects of methamphetamine use. (“Meth Mouth” is the common term for the effects of methamphetamine use and results in rampant decay on the buccal surface and in the interproximal areas of the anterior teeth.)
- Objective 5 Describe the oral conditions of a patient with eating disorders.
 - 1. Bulimia – severe wear on the lingual surface of the teeth caused by stomach acid from repeated vomiting.
 - 2. Anorexia Nervosa – the strength of the teeth and the health of the gingival tissues are reduced because of the lack of calcium and other nutrients.

STANDARD 8

STUDENTS WILL IDENTIFY COMPONENTS OF A COMPREHENSIVE PREVENTIVE DENTISTRY PROGRAM.

- Objective 1 Explain the parts of a preventive dentistry program.
 - 1. Nutrition
 - 2. Patient education
 - 3. Plaque control
 - 4. Fluoride therapy



- 5. Dental check-ups
- Objective 2 Identify different products used for oral hygiene and their uses.
 - 1. Toothbrushes
 - 2. Dental floss/tape
 - 3. Interdental aids
 - 4. Toothpastes
 - 5. Mouth rinses
- Objective 3 Outline techniques for educating patients in oral hygiene.
 - 1. Tooth brushing methods – Bass
 - 2. Flossing
 - 3. Disclosing
- Objective 4 Instruct a patient in preventive education and oral hygiene instruction.
- Objective 5 Explain how diet and nutrition can affect oral conditions.
 - 1. Dental decay is directly linked to the presence of dietary sugars (sucrose) in the diet. Sucrose is highly cariogenic and can be found in many foods. A dental assistant needs to be able to recognize the pattern of decay and counsel with the patient on their nutritional choices.
- Objective 6 Analyze the six areas of the food pyramid (grains, vegetables, fruits, oils, milk, and meat/beans).

Standard 8 Performance Evaluation included below (Optional)

STANDARD 9

STUDENTS WILL PERFORM THE SKILLS AND RESPONSIBILITIES OF A DENTAL ASSISTANT IN THE FRONT OFFICE

- Objective 1 Discuss and apply oral communications.
 - 1. Words
 - 2. Facial expressions
 - 3. Appearance
 - 4. Gestures
 - 5. Mannerisms
 - 6. Listening skills
 - 7. Voice inflection
 - 8. Attitudes
 - 9. Actions
- Objective 2 Demonstrate good phone courtesy.
 - 1. Smile
 - 2. Don't chew gum or eat
 - 3. Speak directly into the receiver
 - 4. Speak clearly and slowly
 - 5. Answer promptly
 - 6. Greet patient – identify yourself and the practice
 - 7. Ask how you can help the caller
- Objective 3 Identify the differences between verbal and nonverbal communications.
 - 1. Verbal – words spoken



- Objective 4 2. Non-verbal – body language.
Discuss the importance of understanding cultural diversity in the dental office.
1. Race
 2. Gender
 3. Cultural heritage
 4. Age
 5. Physical abilities
 6. Spiritual beliefs
- Objective 5 Outline the process of scheduling appointments
1. Guidelines for scheduling – units of time
 2. Confirmation of appointments
 3. Re-call
- Objective 6 Identify the functions of computerized practice management systems and manual bookkeeping practices.
- Objective 7 Identify the data gathering process and prepare a patient record.
1. Registration form
 2. Medical-dental health history form
 3. Clinical examination form
 4. Progress note form.
- Objective 8 Describe how to use these filing systems: alphabetic, numeric, cross-reference, and chronologic.
- Objective 9 Define terminology related to insurance.
1. Assignment of benefits
 2. Carrier
 3. Co-insurance
 4. Deductible
 5. Dependent
 6. Eligibility
 7. Exclusions
 8. Maximum
 9. Provider
 10. Subscriber

Standard 9 Performance Evaluation included below (Optional)

STANDARD 10

STUDENTS WILL PERFORM BASIC LIFE SUPPORT SKILLS

- Objective 1 Describe the signs and symptoms of a common medical emergency and describe how to respond to them.
1. Symptom – what a patient tells you regarding how they feel.
 2. Sign – what you observe in a patient.



3. Common emergencies include: airway obstruction/choking, syncope/fainting, postural hypotension, angina/chest pain, acute myocardial infarction/heart attack, stroke/CVA, hyperventilation, asthma attack, allergic reaction, seizure, and diabetic conditions (diabetic shock, hyperglycemia, and hypoglycemia).

- Objective 2 Demonstrate how to treat syncope.
- Objective 3 Demonstrate how to treat postural hypotension.
- Objective 4 Obtain current CPR certification.

Standard 10 Performance Evaluation included below (Optional)



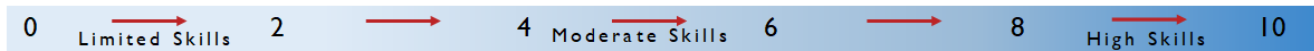
Dental Science I Performance Standards (Optional)

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.

Students Name _____

Class _____

PERFORMANCE RATING SCALE



STANDARD 4 OSHA & CDC Guidelines

Score:

- Demonstrate proper use of PPE and correct handwashing technique.

STANDARD 5 Infection Control

Score:

- Obtain Hepatitis B Vaccination or provide signed declination form.
- Perform sterilization procedures.
- Perform disinfection procedures.

STANDARD 8 Preventive Dentistry Program

Score:

- Instruct a patient in preventive education and oral hygiene.

STANDARD 9 Front Office

Score:

- Prepare a patient record.

STANDARD 10 Life Support Skills

Score:

- Obtain current CPR certification.

PERFORMANCE STANDARD AVERAGE SCORE: