

***DENTAL SCIENCE***  
***CURRICULUM FRAMEWORK***



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## INTRODUCTION

The Nevada CTE Curriculum Frameworks are a resource for Nevada’s public and charter schools to design, implement, and assess their CTE programs and curriculum. The content standards identified in this document are listed as a model for the development of local district programs and curriculum. They represent rigorous and relevant expectations for student performance, knowledge, and skill attainment which have been validated by industry representatives.

The intent of this document is to provide a resource to districts as they develop and implement CTE programs and curricula.

This program ensures the following thresholds are met:

- The CTE course and course sequence teaches the knowledge and skills required by industry through applied learning methodology and, where appropriate, work-based learning experiences that prepare students for careers in high-wage, high-skill and/or high-demand fields. Regional and state economic development priorities shall play an important role in determining program approval. Some courses also provide instruction focused on personal development.
- The CTE course and course sequence includes leadership and employability skills as an integral part of the curriculum.
- The CTE course and course sequence is part of a rigorous program of study and includes sufficient technical challenge to meet state and/or industry-standards.

The CTE program components include the following items:

- Program of Study
- State Skill Standards
- Employability Skills for Career Readiness Standards
- Career Technical Student Organizations (CTSOs)
- Curriculum Framework
- CTE Assessments:
  - Workplace Readiness Skills Assessment
  - End-of-Program Technical Assessment
- Certificate of Skill Attainment
- CTE Endorsement on a High School Diploma
- CTE College Credit

**NEVADA DEPARTMENT OF EDUCATION**  
**CURRICULUM FRAMEWORK FOR**  
**DENTAL SCIENCE**

**PROGRAM INFORMATION**

**Program Title:** Dental Science  
**State Skill Standards:** Dental Science  
**Standards Reference Code:** DS  
**Career Cluster:** Health Science  
**Career Pathway:** Therapeutic Services  
**Program Length:** 3 Levels (L1, L2, L3c)  
**Program Assessments:** Dental Science  
**Workplace Readiness Skills**  
**CTSO:** HOSA  
**Grade Level:** 9-12  
**Industry Certifications:** See Nevada's Approved Certification Listing

**PROGRAM PURPOSE**

The purpose of this program is to prepare students for postsecondary education and employment in the Dental Science industry.

The program includes the following state standards:

- Nevada CTE Skill Standards: Dental Science
- Employability Skills for Career Readiness
- Nevada Academic Content Standards (alignment shown in the Nevada CTE Skill Standards):
  - Science (based on the Next Generation Science Standards)
  - English Language Arts (based on the Common Core State Standards)
  - Mathematics (based on the Common Core State Standards)
- Common Career Technical Core (alignment shown in the Nevada CTE Skill Standards)

**CAREER CLUSTERS**

The National Career Clusters™ Framework provides a vital structure for organizing and delivering quality CTE programs through learning and comprehensive programs of study (POS). In total, there are 16 Career Clusters in the National Career Clusters™ Framework, representing more than 79 Career Pathways to help students navigate their way to greater success in college and career. As an organizing tool for curriculum design and instruction, Career Clusters™ provide the essential knowledge and skills for the 16 Career Clusters™ and their Career Pathways.\*

\*Cite: National Association of State Directors of Career Technical Education Consortium. (2012). Retrieved from <http://www.careertech.org/career-clusters/glance/careerclusters.html>

**PROGRAM OF STUDY**

The program of study illustrates the sequence of academic and career and technical education coursework that is necessary for the student to successfully transition into postsecondary educational opportunities and employment in their chosen career path. (NAC 389.803)

**PROGRAM STRUCTURE**

The core course sequencing provided in the following table serves as a guide to schools for their programs of study. Each course is listed in the order in which it should be taught and has a designated level. Complete program sequences are essential for the successful delivery of all state standards in each program area.

**DENTAL SCIENCE**  
**Core Course Sequence**

<b>COURSE NAME</b>	<b>LEVEL</b>
Dental Science I	L1
Dental Science II	L2
Dental Science III	L3C

The core course sequencing with the complementary courses provided in the following table serves as a guide to schools for their programs of study. Each course is listed in the order in which it should be taught and has a designated level. A program does not have to utilize all of the complementary courses in order for their students to complete their program of study. Complete program sequences are essential for the successful delivery of all state standards in each program area.

**DENTAL SCIENCE**  
**Core Course Sequence with Complementary Courses**

<b>COURSE NAME</b>	<b>LEVEL</b>
Dental Science I	L1
Dental Science II	L2
Dental Science III	L3C
Dental Science Advanced Studies*	AS

\*Complementary Courses

**STATE SKILL STANDARDS**

The state skill standards are designed to clearly state what the student should know and be able to do upon completion of an advanced high school career and technical education (CTE) program. The standards are designed for the student to complete all standards through their completion of a program of study. The standards are designed to prepare the student for the end-of-program technical assessment directly aligned to the standards. (Paragraph (a) of Subsection 1 of NAC 389.800)

**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS**

Employability skills, often referred to as “soft skills,” have for many years been a recognizable component of the standards and curriculum in career and technical education programs. The twenty-one standards are organized into three areas: (1) Personal Qualities and People Skills; (2) Professional Knowledge and Skills; and (3) Technology Knowledge and Skills. The standards are designed to ensure students graduate high school properly prepared with skills employers prioritize as the most important. Instruction on all twenty-one standards must be part of each course of the CTE program. (Paragraph (d) of Subsection 1 of NAC 389.800)

**CURRICULUM FRAMEWORK**

The Nevada CTE Curriculum Frameworks are organized utilizing the recommended course sequencing listed in the program of study and the CTE Course Catalog. The framework identifies the recommended content standards, performance standards, and performance indicators that should be taught in each course.

**CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOs)**

To further the development of leadership and technical skills, students must have opportunities to participate in one or more of the Career and Technical Student Organizations (CTSOs). CTSOs develop character, citizenship, and the technical, leadership and teamwork skills essential for the workforce and their further education. Their activities are considered a part of the instructional day when they are directly related to the competencies and objectives in the course. (Paragraph (a) of Subsection 3 of NAC 389.800)

**WORKPLACE READINESS SKILLS ASSESSMENT**

The Workplace Readiness Skills Assessment has been developed to align with the Nevada CTE Employability Skills for Career Readiness Standards. This assessment provides a measurement of student employability skills attainment. Students who complete a program will be assessed on their skill attainment during the completion level course. Completion level courses are identified by the letter “C”. (e.g., Level = L3C) (Paragraph (d) of Subsection 1 of NAC 389.800)

**END-OF-PROGRAM TECHNICAL ASSESSMENT**

An end-of-program technical assessment has been developed to align with the Nevada CTE Skill Standards for this program. This assessment provides a measurement of student technical skill attainment. Students who complete a program will be assessed on their skill attainment during the completion level course. Completion level courses are identified by the letter “C”. (e.g., Level = L3C) (Paragraph (e) of Subsection 1 of NAC 389.800)

**CERTIFICATE OF SKILL ATTAINMENT**

Each student who completes a course of study must be awarded a certificate which states that they have attained specific skills in the industry being studied and meets the following criteria: A student must maintain a 3.0 grade point average in their approved course of study, pass the Workplace Readiness Skills Assessment, and pass the end-of-program technical assessment. (Subsection 4 of NAC 389.800)

**CTE ENDORSEMENT ON A HIGH SCHOOL DIPLOMA**

A student qualifies for a CTE endorsement on their high school diploma after successfully completing the following criteria: 1) completion of a CTE course of study in a program area, 2) completion of academic requirements governing receipt of a standard diploma, and 3) meet all requirements for the issuance of the Certificate of Skill Attainment. (NAC 389.815)

**CTE COLLEGE CREDIT**

CTE College Credit is awarded to students based on articulation agreements established by each college for the CTE program, where the colleges will determine the credit value of a full high school CTE program based on course alignment. An articulation agreement will be established for each CTE program designating the number of articulated credits each college will award to students who complete the program.

CTE College Credit is awarded to students who: (1) complete the CTE course sequence with a grade-point average of 3.0 or higher; (2) pass the state end-of-program technical assessment for the program; and (3) pass the Workplace Readiness Assessment for employability skills.

Pre-existing articulation agreements will be recognized until new agreements are established according to current state policy and the criteria shown above.

Please refer to the local high school's course catalog or contact the local high school counselor for more information. (Paragraph (b) of Subsection 3 of NAC 389.800)

**ACADEMIC CREDIT FOR CTE COURSEWORK**

Career and technical education courses meet the credit requirements for high school graduation (1 unit of arts and humanities or career and technical education). Some career and technical education courses meet academic credit for high school graduation. Please refer to the local high school's course catalog or contact the local high school counselor for more information. (NAC 389.672)

**CORE COURSE:****RECOMMENDED STUDENT PERFORMANCE STANDARDS****COURSE INFORMATION:**

**Course Title:** Dental Science I  
**Abbr. Name:** DENTAL SCI I  
**Credits:** 1  
**Level:** L1  
**CIP Code:** 51.0601  
**Prerequisite:** None  
**CTSO:** HOSA

**COURSE DESCRIPTION:**

This introductory course is designed for the student interested in a career in the dental field. It covers all procedures utilized in the dental office during the practice of dentistry. It gives students a vast knowledge base of dental anatomy, dental disease processes and treatment. It develops the dexterity, knowledge and communication skills needed to work as a dental assistant. Emphasis is placed on developing critical-thinking skills, research skills, and necessary techniques. The appropriate use of technology and industry-standard equipment is an integral part of this course.

**TECHNICAL STANDARDS:****CONTENT STANDARD 1.0 : INTRODUCTION TO DENTISTRY**

Performance Standard 1.1 : Review the History of Dentistry

*Performance Indicators :* 1.1.1-1.1.4

Performance Standard 1.2 : Demonstrate Knowledge of Dental Careers

*Performance Indicators :* 1.2.1-1.2.6

Performance Standard 1.3 : Analyze Licensing Requirements

*Performance Indicators :* 1.3.1-1.3.4

Performance Standard 1.4 : Understand Healthcare Systems

*Performance Indicators :* 1.4.1

**CONTENT STANDARD 2.0 : UNDERSTAND MEDICAL AND DENTAL TERMINOLOGY**

Performance Standard 2.1 : Demonstrate Knowledge of Medical Terminology

*Performance Indicators :* 2.1.1-2.1.5

Performance Standard 2.2 : Demonstrate Knowledge of Dental Terminology

*Performance Indicators :* 2.2.1-2.2.3

**CONTENT STANDARD 3.0 : DISCUSS ANATOMY AND PHYSIOLOGY**

Performance Standard 3.1 : Demonstrate Knowledge of Microbiology

*Performance Indicators :* 3.1.1-3.1.6

Performance Standard 3.2 : Identify Body Systems

*Performance Indicators :* 3.2.1-3.2.2

Performance Standard 3.3 : Understand Head and Neck Anatomy

*Performance Indicators :* 3.3.1-3.3.4

Performance Standard 3.4 : Discuss Tooth Morphology

*Performance Indicators :* 3.4.1-3.4.3

**CONTENT STANDARD 4.0 : UNDERSTAND INFECTION CONTROL**

Performance Standard 4.1 : Utilize Hand Hygiene

*Performance Indicators* : 4.1.1-4.1.3

Performance Standard 4.2 : Interpret OSHA and CDC Guidelines

*Performance Indicators* : 4.2.1-4.2.5

Performance Standard 4.3 : Identify Personal Protective Equipment (PPE)

*Performance Indicators* : 4.3.1-4.3.2

Performance Standard 4.4 : Identify and Illustrate Operatory Disinfection

*Performance Indicators* : 4.4.1-4.4.5**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS:****CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

*Performance Indicators* : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

*Performance Indicators* : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

*Performance Indicators* : 1.3.1-1.3.4**ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS\*:**

**English Language Arts:** Reading Standards for Literacy in Science and Technical Subjects  
 Writing Standards for Literacy in Science and Technical Subjects  
 Speaking and Listening

**Mathematics:** Mathematical Practices  
 Geometry-Congruence  
 Geometry-Circles

**Science:** Nature of Science  
 Physical Science  
 Life Science  
 Earth and Space

\* Refer to the Dental Science Standards for alignment by performance indicator.



**Core Course:****RECOMMENDED STUDENT PERFORMANCE STANDARDS****COURSE INFORMATION:****COURSE TITLE: Dental Science II****ABBR. NAME: DENTAL SCI II****CREDITS: 1****LEVEL: L2****CIP CODE: 51.0601****PREREQUISITE: Dental Science I****CTSO: HOSA****COURSE DESCRIPTION:**

This course is a continuation of Dental Science I. This course allows intermediate dental science students to develop their knowledge and skills learned in Dental Science I. Areas of study will include oral pathology, dental medications, legal and ethical issues, and research skills. The appropriate use of technology and industry-standard equipment is an integral part of this course.

**TECHNICAL STANDARDS:****CONTENT STANDARD 5.0 : UNDERSTAND THE MAINTAINANCE OF DENTAL HEALTH**

Performance Standard 5.1 : Describe Caries

*Performance Indicators* : 5.1.1-5.1.5

Performance Standard 5.2 : Understand Periodontal Disease

*Performance Indicators* : 5.2.1-5.2.5

Performance Standard 5.3 : Understand Preventive Dentistry

*Performance Indicators* : 5.3.1-5.3.6**CONTENT STANDARD 6.0 : EVALUATE PHARMACOLOGY IN DENTISTRY**

Performance Standard 6.1 : Understand Basics of Pharmacology in a Dental Setting

*Performance Indicators* : 6.1.1-6.1.6

Performance Standard 6.2 : Understand Dental Pain Management

*Performance Indicators* : 6.2.1-6.2.4**CONTENT STANDARD 7.0 : UNDERSTAND RADIOLOGY**

Performance Standard 7.1 : Discuss Radiation Safety

*Performance Indicators* : 7.1.1-7.1.6

Performance Standard 7.2 : Identify Radiology Equipment

*Performance Indicators* : 7.2.1-7.2.5

Performance Standard 7.3 : Explain Radiological Exposure and Processing

*Performance Indicators* : 7.3.1-7.3.5**CONTENT STANDARD 8.0 : DEMONSTRATE PRACTICE MANAGEMENT SKILLS**

Performance Standard 8.1 : Compose a Resume

*Performance Indicators* : 8.1.1-8.1.2

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Performance Standard 8.2 : Summarize American Dental Association's (ADA) Insurance Codes

*Performance Indicators* : 8.2.1

Performance Standard 8.3 : Basic Understanding of Electronic Medical Records

*Performance Indicators* : 8.3.1-8.3.2

**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS:**

**CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

*Performance Indicators* : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

*Performance Indicators* : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

*Performance Indicators* : 1.3.1-1.3.4

**ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS\*:**

**English Language Arts:** Reading Standards for Literacy in Science and Technical Subjects  
Writing Standards for Literacy in Science and Technical Subjects  
Speaking and Listening

**Mathematics:** Mathematical Practices  
Geometry-Congruence  
Geometry-Circles

**Science:** Nature of Science  
Physical Science  
Life Science  
Earth and Space

\* Refer to the Dental Science Standards for alignment by performance indicator.

**CORE COURSE:****RECOMMENDED STUDENT PERFORMANCE STANDARDS****COURSE INFORMATION:****COURSE TITLE: Dental Science III****ABBR. NAME: DENTAL SCI III****CREDITS: 1****LEVEL: L3C****CIP CODE: 51.0601****PREREQUISITE: Dental Science II****PROGRAM ASSESSMENTS: DENTAL SCIENCE****WORKPLACE READINESS SKILLS****CTSO: HOSA****COURSE DESCRIPTION:**

This course is a continuation of Dental Science II. This course provides advanced dental science students with instruction in advanced techniques and processes. The students will continue to develop all skills learned in Dental Science II. The appropriate use of technology and industry-standard equipment is an integral part of this course. An internship may be incorporated into the course of study to assist students in making a transition from school to work. Upon successful completion of this course, students will have acquired entry-level skills for employment and be prepared for postsecondary education.

**TECHNICAL STANDARDS:****CONTENT STANDARD 9.0 : DEMONSTRATE PRE-CLINICAL PROCEDURES**

Performance Standard 9.1 : Differentiate Chairside Procedures

*Performance Indicators* : 9.1.1-9.1.8

Performance Standard 9.2 : Analyze Expanded Functions

*Performance Indicators* : 9.2.1-9.2.2

Performance Standard 9.3 : Assess Emergencies and Medical Considerations

*Performance Indicators* : 9.3.1-9.3.5**CONTENT STANDARD 10.0 : UTILIZE DENTAL INSTRUMENTS AND EQUIPMENT**

Performance Standard 10.1 : Describe the use of Dental Instruments

*Performance Indicators* : 10.1.1-10.1.5

Performance Standard 10.2 : Describe the use of Dental Equipment

*Performance Indicators* : 10.2.1-10.2.5**CONTENT STANDARD 11.0 : CATEGORIZE DENTAL MATERIALS**

Performance Standard 11.1 : Classify Materials

*Performance Indicators* : 11.1.1-11.1.6

Performance Standard 11.2 : Practice Laboratory Procedures

*Performance Indicators* : 11.2.1-11.2.3

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**CONTENT STANDARD 12.0 : UNDERSTAND THE VARIOUS DENTAL SPECIALTIES**

Performance Standard 12.1 : Understand the Specialist's Role in Dentistry

*Performance Indicators* : 12.1.1-12.1.8**CONTENT STANDARD 13.0 : UNDERSTAND THE LEGAL AND ETHICAL RESPONSIBILITIES WITHIN THE HEALTHCARE SYSTEM**

Performance Standard 13.1 : Perform Duties According to Regulations, Policies, and Laws

*Performance Indicators* : 13.1.1-13.1.9

Performance Standard 13.2 : Evaluate the Role of Ethical Issues Impacting Healthcare

*Performance Indicators* : 13.2.1-13.2.3

Performance Standard 13.3 : Demonstrate Professional and Ethical Standards Impacting Healthcare

*Performance Indicators* : 13.3.1-13.3.5**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS:****CONTENT STANDARD 1.0 : DEMONSTRATE EMPLOYABILITY SKILLS FOR CAREER READINESS**

Performance Standard 1.1 : Demonstrate Personal Qualities and People Skills

*Performance Indicators* : 1.1.1-1.1.7

Performance Standard 1.2 : Demonstrate Professional Knowledge and Skills

*Performance Indicators* : 1.2.1-1.2.10

Performance Standard 1.3 : Demonstrate Technology Knowledge and Skills

*Performance Indicators* : 1.3.1-1.3.4**ALIGNMENT TO THE NEVADA ACADEMIC CONTENT STANDARDS\*:**

**English Language Arts:** Reading Standards for Literacy in Science and Technical Subjects  
 Writing Standards for Literacy in Science and Technical Subjects  
 Speaking and Listening

**Mathematics:** Mathematical Practices  
 Geometry-Congruence  
 Geometry-Circles

**Science:** Nature of Science  
 Physical Science  
 Life Science  
 Earth and Space

\* Refer to the Dental Science Standards for alignment by performance indicator.

**COMPLEMENTARY COURSE(S):****RECOMMENDED STUDENT PERFORMANCE STANDARDS**

Programs that utilize the complementary courses can include the following courses. The Advanced Studies course allows for additional study through investigation and in-depth research.

**COURSE INFORMATION:**

**COURSE TITLE: Dental Science Advanced Studies**

**ABBR. NAME: DENTAL SCI AS**

**CREDITS: 1**

**LEVEL: AS**

**CIP CODE: 51.0601**

**PREREQUISITE: Dental Science III**

**CTSO: HOSA**

**COURSE DESCRIPTION:**

This course is offered to students who have achieved all content standards in a program whose desire is to pursue advanced study through investigation and in-depth research. Students are expected to work independently or in a team and consult with their supervising teacher for guidance. The supervising teacher will give directions, monitor, and evaluate the students' topic of study. Coursework may include various work-based learning experiences such as internships and job shadowing, involvement in a school-based enterprise, completion of a capstone project, and/or portfolio development. This course may be repeated for additional instruction and credit.

**TECHNICAL STANDARDS:**

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

**EMPLOYABILITY SKILLS FOR CAREER READINESS STANDARDS:**

Students have achieved all program content standards and will pursue advanced study through investigation and in-depth research.

**SAMPLE TOPICS:**

- Implantology
- CAD/CAM
- Cosmetic
- Lab Technicians