



## Dental Assisting Course Outline

### Course Description

The Dental Assisting Program is a 348 hour course that includes theory and hands-on experience in areas such as: chairside assisting, dental anatomy, patient communication, impressions, models, tray set-ups and infection control. The program also offers the opportunity for the student to complete the requirements established by the Dental Board of California and earn their X-ray Certificate.

### Course Details

**Length of Program and Academic Credits Earned:**

Year-long 2 hour course = 348 hours total (~174/semester)

20 total credits (10/semester):

- 10 non-a–g elective credits in an academic year (5/semester)
- 10 a–g credits in an academic year (5/per semester)  
("g" Elective – Laboratory Science – Integrated Science)

**Pre-Requisites:**

- High School Junior or Senior, or 16 years or older
- Completed health or biology

**CTE Classification:**

- **Industry Sector:** Health Science and Medical Technology
- **Industry Pathway:** Patient Care
- **CA Basic Education Data System (CBEDS) Code:** 4249

**Work-Based Learning:**

Students with a B or better and demonstrate mastery of skills, will perform an internship for second semester ( minimum 156 hours)

**Certifications & State Tests:**

- Infection Control Certification (upon successful completion)
- Radiation Safety Certificate (upon successful completion)
- SVCTE Certificate of Completion awarded with “C” or better average for both semesters.

<b>Possible Education &amp; Career Pathways</b>		For more career information: <a href="http://www.onetonline.org">www.onetonline.org</a>
<b>College &amp; Career Pathways:</b>	<b>Career Opportunities</b>	<b>O*NET Codes</b>
<u>Post-Secondary:</u> Students with a high school diploma and having successfully completed this course have a number of entry-level career opportunities, as well as continuing their education.	<ul style="list-style-type: none"> <li>● Dental Assistants</li> </ul>	31-9091.00
<u>Continuing Education: Including Community College, Training Programs, Certifications, etc:</u> <ul style="list-style-type: none"> <li>● AA or AS in</li> </ul>	<ul style="list-style-type: none"> <li>● Dental Hygienists</li> <li>● Dental Laboratory Technicians</li> </ul>	29-2021.00 51-9081.00
<u>University Majors &amp; Degrees:</u> <ul style="list-style-type: none"> <li>● BA or BS in</li> </ul>	<ul style="list-style-type: none"> <li>● Health Specialties Teachers, Postsecondary</li> </ul>	25-1071.00
<u>Post-Baccalaureate Degrees:</u> <ul style="list-style-type: none"> <li>● Masters or Doctorate in</li> </ul>	<ul style="list-style-type: none"> <li>● Dentists, General</li> <li>● Prosthodontists</li> <li>● Orthodontists</li> <li>● Oral and Maxillofacial Surgeons</li> <li>● Dentists, All Other Specialists</li> </ul>	29-1021.00 29-1024.00 29-1023.00 29-1022.00 29-1029.00

**Unit 1: Career Readiness & Professionalism (Ongoing Unit) 13 hours**

Students will develop personal and professional skills in the classroom that will transfer to the workplace.

- Time management and organization
- Interpersonal skills
- Work with a variety of technology
- Creative thinking and problem solving
- Legal and ethical issues
- Resume, job applications and effective interview skills
- Professions within dentistry - dental specialty areas
- Profession overview
- Dental organizations

**Standards Alignments:**

**CCSS: WS** 11-12.4, 11-12.7, 11-12.8

**NGSS: SEP** 4, 8, **LS** 1.D, 2.D

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Key Assignment:</b> Students will prepare a portfolio including a cover letter, resume and various dental competencies through workshop, self and peer editing, teacher instruction and demonstration.</p> <p><b>Assessment:</b> rubric, observation, peer and self- assessment</p>	3.0, 4.0	B 1.2, B 1.2
<p>✓ <b>Key Assignment:</b> Students will role play a variety of scenarios including self introduction, interviews and basic professional communication skills necessary to obtain internships and jobs within the dental industry.</p> <p><b>Assessment:</b> instructor observation, peer feedback, discussion</p>	2.1	B 1.2, B 1.2
<p>✓ <b>Key Assignment:</b> Students will work in collaborative groups to research a specific specialty area of their choice within dentistry and determine college tuition costs, college entry requirements, licensing and certifications, salary range and location of colleges. Students will have the option to present using either PowerPoint, tri-fold board or poster followed by an oral presentation to their peers for feedback. Students will then present their edited version to members of the community during a school event to inform the public of options in dentistry.</p> <p><b>Assessment:</b> instructor observation, peer feedback, discussion, writing, oral defense, oral questioning</p>	3.0, 4.1, 5.1	B 1.2, B 1.2

<p>✓ <b>Key Assignment:</b> Students will have the opportunity to participate in a SkillsUSA Competition to enhance their professional skills in the field of dentistry. In preparation for competition, students will fund raise, attend meetings, meet all requirements and dates and prepare for competition.</p> <p><b>Assessment:</b> observation, teacher-student conference, written work samples, visual inspection of skills</p>	<p>1.0, 2.1, 2.2, 2.3, 2.4, 2.5, 3.0, 4.1, 5.0, 7.7, 9.0, 10.0, 11.5</p>	<p>B1.2, B1.2</p>
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<b>Unit 2: Dental Terminology and Tooth Morphology (Ongoing Unit)</b>	<b>25 hours</b>
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Students will be presented with extensive vocabulary relating to the dental field. This vocabulary is essential to build a knowledge base necessary to communicate effectively in the dental community, as well as with the patients.

- Essential dental terminology
- Names and numbers of teeth
- Tooth structure

**Standards Alignments:**  
**CCSS:** RLST 11-12.3, 11-12.4, 11-12.5; **WS** 11-12.4, 11-12.7, 11-12.8, 11-12.9  
**NGSS:** SEP 2, 4, 8, LS 1.D

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Key Assignment-Research:</b> Students will be provided a diagram of both primary and permanent teeth. They will work independently to identify, label and color code the name and universal number of each tooth along with the surface and structure.</p> <p><b>Assessment:</b> teacher observation, visual inspection and feedback, quiz, test</p>	<p>4.0, 10.0</p>	<p>B 2.0, B 2.2, B 5.0, B 5.1, B 5.2, B 5.3, B 5.4, B 5.5, B 5.6, B 5.7</p>
<p>✓ <b>Key Assignment-Research:</b> Students will work independently to research, hand draw, identify, label, color code and write a detailed description and characteristics of each individual type of tooth including the name and universal number of each tooth along with the surface and structure.</p> <p><b>Assessment:</b> teacher observation, visual inspection and feedback, peer edits and feedback, quiz, test, written documentation</p>	<p>4.0, 10.0</p>	<p>B 2.0, B 2.2, B 5.0, B 5.1, B 5.2, B 5.3, B 5.4, B 5.5, B 5.6, B 5.7</p>
<p>✓ <b>Lab-Oral Cavity:</b> Working with the instructor, students will use a typodont model to brush, floss and identify various parts of the teeth and oral cavity as per instructor request.</p> <p><b>Assessment:</b> oral questioning and defense</p>	<p>2.0, 5.0, 6.0, 10.0</p>	<p>B 1.2, B 1.4, B 2.1, B 2.3 B 5.1</p>

<p>✓ <b>Lab-Anatomical Landmarks:</b> Using a 3D model of a tooth/dentition, students will work in pairs to locate the anatomical landmarks of the tooth/teeth. Students will question each other and assess each other's knowledge prior to instructor evaluation.</p> <p><b>Assessment:</b> peer feedback, instructor observation, oral questioning and defense, pair share</p>	2.0, 5.0	B 2.0, B 2.2, B 5.0, B 5.1, B 5.2, B 5.3, B 5.4, B 5.5, B 5.6, B 5.7
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<b>Unit 3: Infection Control</b>	<b>20 hours</b>
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This unit will introduce students to the important components of infection control and dental asepsis. Working to reduce the spread of microorganisms in the clinic setting is an important task for a dental assistant in any office. Students will be introduced to standard precautions that can be implemented in the classroom and workplace.

- Disinfecting
- OSHA Compliance
- Sterilizing
- Infection Control Certification
- Knowledge of Bloodborne Pathogen Standards
- Personal Protective Equipment (PPE)

**Standards Alignments:**

**CCSS:** RLST 11-12.3, 11-12.4, 11-12.5; **WS** 11-12.4, 11-12.7, 11-12.8, 11-12.9

**NGSS:** SEP 3, 4, 8, LS 1.D, 2.D

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Lab-PPE :</b> Students will individually perform antiseptic hand washing, demonstrate proper donning and removal of PPE to a peer for feedback and then to instructor for quality check.</p> <p><b>Assessment:</b> teacher observation, peer assessment, skills checklist/rubric</p>	6.0, 6.3, 6.5, 6.8,	B 10.4, B 10.5
<p>✓ <b>Lab-Germ Transmission:</b> Students will toss a ball (secretly covered with glow germ) between classmates while having a discussion about germ transmission. Unknowingly, students will be accumulating the glow germ on their hands simulating germs. Students will be instructed to wash hands as per textbook instructions. When teacher turns out light and engages blacklight, students will examine their hands to see how well they washed based on remaining glow germ. Students will re-wash their hands and check again.</p> <p><b>Assessment:</b> peer feedback and discussion, peer checks, teacher observation, skills checklist/rubric</p>	2.0, 5.0, 6.0,	B 11.0, B 11.1, B 11.2, B 11.3, B 11.4

<p>✓ <b>Lab-Autoclave:</b> In pairs, students will clean and sterilize a variety of dental instruments using an ultrasonic cleaner, cold sterile solution and autoclave. They will conduct a spore strip test to confirm instruments are sterilized. Individually, they will apply this knowledge in their daily activities in the classroom, demonstrate competence to instructor and utilize the acquired knowledge in their internship.</p> <p><b>Assessment:</b> quiz, verbal and written test, observation, skills checklist/rubric</p>	2.0, 4.0, 6.0, 8.0, 10.0	B 11.0, B 11.1, B 11.2, B 11.3, B 11.4
<p>✓ <b>Lab and Certification-Infection Control:</b> Students will obtain Infection Control Certification by demonstrating their competency to instructor and clinical site utilizing a state of California (CA) approved checklist.</p> <p><b>Assessment:</b> state approved checklist, instructor and clinical observation</p>	2.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0	B 11.0, B 11.1, B 11.2, B 11.3, B 11.4

<b>Unit 4: Radiography</b>	<b>60 hours</b>
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This unit will introduce the hazards, safety and importance of radiographs. Students will be introduced to the most current techniques in fabricating traditional and digital x-rays.

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| <ul style="list-style-type: none"> <li>● Safety</li> <li>● Types of X-rays</li> <li>● Analog (traditional film) and digital X-ray</li> </ul> | <ul style="list-style-type: none"> <li>● Analog film processing</li> <li>● Mounting of X-rays</li> <li>● Patient comfort</li> </ul> |
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**Standards Alignments:**

**CCSS:** RLST 11-12.3, 11-12.4, 11-12.5; **WS** 11-12.4, 11-12.7, 11-12.8, 11-12.9

**NGSS:** SEP 3, 4, 7, 8, LS 1.D, 2.D

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Lab-X-ray Reading:</b> Using a Dexttr Head Evaluation Form, students will work in pairs to read a teacher provided full mouth survey (X-rays), identify types of teeth and radiographic errors (cone-cut, overlapping, backwards film), while using a numbering system to identify and classify radiographic errors.</p> <p><b>Assessment:</b> evaluation form, oral defense, oral questioning, discussion, visual inspection</p>	2.0, 5.0, 8.0, 9.0, 10.0	B 6.0, B 7.0, B1 0.0
<p>✓ <b>Lab-X-ray:</b> Students will apply two different X-ray techniques (parallel and bisecting) on a Dexttr Head to show their competency in successfully completing one bitewing and one full mouth X-ray for each technique with minimal/minor error.</p> <p><b>Assessment:</b> evaluation form, oral defense, oral questioning, discussion, visual inspection</p>	2.0, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0	B 6.0, B 7.0, B 10.0, B 11.0, B 11.1, B 11.2, B 11.3, B 11.4

<p>✓ <b>Lab-Ongoing X-ray and Practicum:</b> Students will perform an FMX (full mouth X-ray) on four live patients which may consist of parents, peers, family, friends, community members to comply with CA guidelines (eighteen acceptable films/twenty one possible trials). Students will perform their FMX at both classroom and internship site). This skill will lead to CA Radiation Safety Certification upon successful completion.</p> <p><b>Assessment:</b> evaluation form, oral defense, oral questioning, discussion, visual inspection</p>	<p>2.0, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0</p>	<p>B4.0-B4.5, B6.0, B7.0, B10.0, B11.0-11.4</p>
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<b>Unit 5: Chairside Procedures</b>	<b>20 hours</b>
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Students will be introduced to all aspects of chairside assisting for a dental assistant

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| <ul style="list-style-type: none"> <li>● Tray set ups (dental instruments/handpieces)</li> <li>● Amalgam procedures</li> <li>● Composite procedures</li> <li>● Instrument transfer</li> </ul> | <ul style="list-style-type: none"> <li>● Crown and bridge procedure</li> <li>● Operatory equipment</li> <li>● Passing of instruments</li> <li>● Plaque control/oral hygiene instructions</li> </ul> | <ul style="list-style-type: none"> <li>● Aspirating (HVE placement)</li> <li>● Placement of toffelmire and matrix</li> <li>● Charting/review Health History</li> <li>● Syringe preparation</li> <li>● Dental materials</li> </ul> |
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**Standards Alignments:**

**CCSS:** RLST 11-12.3, 11-12.4, 11-12.5; **WS** 11-12.4, 11-12.7, 11-12.8, 11-12.9

**NGSS:** SEP 3, 4, 8, LS 1.D, 2.D

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Lab and Practical-Treatment Tray:</b> Students will identify the name and purpose of dental instruments and place them on the treatment tray for amalgam, composite, crown and bridge, procedures. They will demonstrate to the instructor proper set up within 2 minutes without error and orally identify each instrument. Students will have the opportunity to retest until mastered.</p> <p><b>Assessment:</b> 2 minute timed set-up, observation, visual inspection, oral identification, demonstration</p>	<p>2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0</p>	<p>B 1.0,</p>
<p>✓ <b>Lab-Operatory:</b> Instructor will provide students with a variety of charting scenarios. Students will read the chart and analyze and determine the necessary equipment and materials to set up the operatory for the proper procedure(s) following all basic dental procedures to include proper infection control guidelines. Students will have the opportunity to retest until mastered.</p> <p><b>Assessment:</b> observation, visual inspection, demonstration</p>	<p>2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0</p>	<p>B 4.0, B 4.1, B 4.2, B 4.3, B 4.4, B 4.5, B 5.0, B 5.1, B 5.2, B 5.3, B 5.4, B 5.6, B 6.0, B 6.1, B 6.2, B 6.3, B 6.4, B 6.5,</p>

		B 6.6, B 7.0, B 7.1, B 7.2, B 7.3, B 7.4, B 8.0, B 8.2, B 8.3, B 8.4, B 8.5, B 9.1, B 10.0, B 12.0
<p>✓ <b>Key Assignment:</b> While working with Fletcher heads and using a variety of teacher provided scenarios, students will demonstrate their ability to properly use four-handed dentistry to pass instruments and demonstrate knowledge of procedures.</p> <p><b>Assessment:</b> observation, visual inspection, demonstration</p>	2.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0	B 1.1, B 1.2, B 2.2, B 2.4
<p>✓ <b>Key Assignment:</b> Students will differentiate between permanent and temporary dental cement and then describe when they are used in dental procedures. They will mix a variety of dental cements utilizing different techniques. The students will individually demonstrate their knowledge of mixing techniques, measurement, and consistency by producing a variety of mixed cements upon request by instructor.</p> <p><b>Assessment:</b> observation, visual inspection, demonstration</p>	2.0, 5.0, 6.0, 8.0, 10.0	B 4.0, B 4.1, B 4.2, B 4.3, B 4.4, B 4.5, B 5.0, B 5.1, B 5.2, B 5.3, B 5.4, B 5.5, B 5.6, B 6.0, B 6.1, B 6.2, B 6.3, B 6.4, B 6.5, B 6.6, B 7.0, B 7.1, B 7.2, B 7.3, B 7.4, B 8.0, B 8.2, B 8.3, B 8.4, B 8.5, B 9.1 B 10.0, B 12.0

## Unit 6 : Lab Procedures

45 hours

Students will be introduced to laboratory equipment and safety protocols. Students will understand the properties of alginate and gypsum products, as well as the mixing techniques for both.

- Plaster models
- Alginate impressions
- Fabricate bleaching trays
- Patient comfort

### Standards Alignments:

**CCSS:** RLST 11-12.3, 11-12.4, 11-12.5; **WS** 11-12.4, 11-12.7, 11-12.8, 11-12.9

**NGSS:** SEP 3, 4, 8, LS 1.D, 2.D

**Key Assignments**

**CTE Anchor Standards**

**CTE Pathway Standards**



<p>✓ <b>Key Assignment:</b> After selecting all of the proper armamentarium, students will individually mix plaster to the proper consistency and pour study models using provided molds to demonstrate proper pouring technique.</p> <p><b>Assessment:</b> self assessment, instructor check, visual inspection</p>	4.0, 5.0, 10.0	B 2.0, B 3.1
<p>✓ <b>Key Assignment:</b> Building on previously tested skills, students will select all of the proper armamentarium, measure alginate material, mix to the proper consistency, load impression tray and take maxillary and mandibular impressions on a Typodont. Student will visually examine impression and evaluate for accuracy. If accurate, students will utilize model to pour plaster. If inaccurate, students will have the opportunity to retake impression until mastery.</p> <p><b>Assessment:</b> self assessment, instructor check, visual inspection, checklist, oral defense</p>	5.0, 10.0	B 2.0, B 3.1
<p>✓ <b>Key Assignment:</b> Building on previously tested skills, students will begin live patient work. While donning all PPE, they will select all of the proper armamentarium, set up operatory following all infection control protocol, measure alginate material, mix to the proper consistency, load impression tray and take maxillary and mandibular impressions. Student will visually examine impression and evaluate for accuracy. If accurate, students will utilize model to pour plaster. If inaccurate, students will have the opportunity to retake impression until mastery.</p> <p><b>Assessment:</b> self assessment, instructor check, visual inspection, checklist, oral defense, rubric, peer feedback</p>	2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0	B 4.0, B 4.1, B 4.2, B 4.3, B 4.4, B 4.5, B 6.0, B 7.0, B 9.0, B 9.1, B 10.0, B 11.0, B 11.1, B 11.2, B 11.3, B 11.4
<p>✓ <b>Key Assignment:</b> Building on previously tested skills, students will trim plaster models previously poured to proper specification while donning proper PPE and following all safety procedures.</p> <p><b>Assessment:</b> self assessment, instructor check, visual inspection</p>	4.0, 5.0, 10.0	B 2.0, B 3.1
<p>✓ <b>Key Assignment:</b> Students will prepare and trim a plaster model in preparation for manufacturing a bleaching tray. Students will follow and demonstrate all procedures while operating the vacuum former to construct a bleaching tray to industry standard including cutting and trimming tray to fit patient mouth.</p> <p><b>Assessment:</b> self assessment, instructor check, visual inspection</p>	4.0, 5.0, 10.0	B 2.0, B 3.1

**Unit 7: Anatomy** **9 hours**

Students will recognize landmarks of the head, neck and oral cavity.

- Skull and cranium
- Facial muscles
- Sinuses
- Salivary glands and ducts

**Standards Alignments:**  
**CCSS: RLST 11-12.3, 11-12.4, 11-12.5; WS 11-12.4, 11-12.7, 11-12.8, 11-12.9**  
**NGSS: SEP 3, 4, 8, LS 1.D, 2.D**

Key Assignments	CTE Anchor Standards	CTE Pathway Standards
<p>✓ <b>Key Assignment:</b> Students will construct an anatomically correct clay model and/or illustrate and color code a diagram to identify name and function of the facial muscles, muscles of mastication, sinuses, skull/cranium, salivary glands/ducts and nerves. Students will identify anatomical landmarks to help with radiography and other dental procedures.</p> <p><b>Assessment:</b> quiz, test, visual inspection, oral defense</p>	5.1, 5.3, 5.6, 10.1, 10.3	B 2.0

**Unit 8 : Internship** **156 hours**

Students meeting all requirements for an internship will have the opportunity to practice their medical assisting skills in a medical setting within the community during their second semester. The requirements for this are:

- Good attendance (no more than five absences per semester)
- Professional attitude with professional appearance
- “B” or better grade with completion of all required lab skills
- Hepatitis B vaccine series recommended
- Good dexterity skills
- All required forms completed
- Clinical site agreement (may be completed two months prior to the start date)
- CPR encouraged, but not required

**Standards Alignments:**  
**CCSS: RLST 11-12.3, 11-12.4, 11-12.5; WS 11-12.4, 11-12.8**  
**NGSS: SEP 3, 4, 8, LS 1.D, 2.D**

Key Assignments	CTE Anchor	CTE Pathway
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	Standards	Standards
<p>✓ <b>Key Assignment-Work Based Learning:</b> Under the supervision of their SVCTE instructor, students will be placed in a dental setting and assist in the back office as a member of the team working with patients while gaining real-world, hands-on experience in the dental field. Students will chart patient care and periodontal information and will write short summaries regarding patient treatment. This internship is 156 hours.</p> <p><b>Assessment:</b> weekly time card, work supervisor comments, visitation by the teacher, mid evaluation and final evaluation, chart checks, journaling</p>	2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0	B 5.0, B 6.2, B 6.4, B 7.1, B 7.3, B 12.0, B 13.0

Instructional Materials	
Textbooks:	Electronic Media/Supplemental Print Materials/Online Resources:
<p><b>Modern Dental Assisting</b> 10<sup>th</sup> edition Doni L. Bird/Debbie S. Robinson – Elsevier Saunders © 2012 ISBN: 978-1-4377-1729-7</p> <p><b>Dental Instruments - A Pocket Guide</b> 2<sup>nd</sup> edition Linda R. Bartolomucci Boyd - Elsevier Saunders © 2005 ISBN-13: 978-1-4160-2329-6</p>	<ul style="list-style-type: none"> <li>• Quizlet</li> <li>• Kahoot!</li> </ul>

Standards Assessed in this Course	
<b>CTE Anchor Standards:</b>	
1.0	Academics: Academics standards are aligned to pathways; see below.
2.0	Communications: Acquire and use accurately sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.
3.0	Career Planning and Management: Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.
4.0	Technology: Use existing and emerging technology, to investigate, research, and produce products and services, including new information, as required in the sector workplace environment.

- 5.0 Problem Solving and Critical Thinking: Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.
- 6.0 Health and Safety: Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the sector workplace environment.
- 7.0 Responsibility and Flexibility: Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the sector workplace environment and community settings.
- 8.0 Ethics and Legal Responsibilities: Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.
- 9.0 Leadership and Teamwork: Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution.
- 10.0 Technical Knowledge and Skills: Apply essential technical knowledge and skills common to all pathways in the sector following procedures when carrying out experiments or performing technical tasks.

**Health Science and Medical Technology Sector — Patient Care Pathway Standards:**

**B1.0 Recognize the integrated systems approach to health care delivery services: prevention, diagnosis, pathology, and treatment**

- B1.1 Know relationship and use of an integrated healthcare delivery system.
- B1.2 Understand the range between prevention, diagnosis, pathology, and treatment procedures.
- B1.3 Understand the significance of nontraditional approaches to health care in relationship to delivery systems.
- B1.4 Illustrate the value of preventive and early intervention in relationship to health care practices.
- B1.5 Describe the importance of reimbursement systems in relationship to the delivery of patient care.

**B2.0 Understand the basic structure and function of the human body and relate normal function to common disorders.**

- B2.1 Know basic human body structure and function in relationship to specific care between prevention, diagnosis, pathology, and treatment.
- B2.2 Describe basic stages of growth and development.
- B2.3 Recognize common disease and disorders of the human body.
- B2.4 Compare normal function of the human body to the diagnosis and treatment of disease and disorders.

**B3.0 Know how to apply mathematical computations used in health care delivery system.**

- B3.1 Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).
- B3.2 Analyze diagrams, charts, graphs, and tables to interpret health care results.
- B3.3 Record time using the 24-hour clock.

**B4.0 Recognize and practice components of an intake assessment relevant to patient care.**

- B4.1 Conduct basic interview to acquire new knowledge (e.g., medical and family histories).
- B4.2 Identify and summarize major life events as they impact health care practices and patient outcomes.
- B4.3 Observe patient actions, interests, and behaviors while documenting responses.



- B4.4 Collect and synthesize information or data about the patient's symptoms and vital signs.
- B4.5 Evaluate information gathered and connect patient data to appropriate system of care.
- B5.0 Know the definition, spelling, pronunciation, and use of appropriate terminology in the healthcare setting.**
- B5.1 Use medical terminology in patient care appropriate to communicate information and observations.
- B5.2 Accurately spell and define occupationally specific terms related to health care.
- B5.3 Use roots, prefixes, and suffixes to communicate information.
- B5.4 Use medical abbreviations to communicate information.
- B5.5 Know the basic structure of medical terms.
- B5.6 Demonstrate the correct pronunciation of medical terms.
- B5.7 Practice word building medical terminology skills.
- B6.0 Communicate procedures and goals to patients using various communication strategies to respond to questions and concerns.**
- B6.1 Observe and document the ability of patients to comprehend and understand procedures and determine how to adjust communication techniques.
- B6.2 Use active listening skills (e.g., reflection, restatement, and clarification) and communication techniques to gather information from the patient.
- B6.3 Formulate appropriate responses to address the patient concerns and questions in a positive manner.
- B6.4 Employ sensitivity and withhold bias when communicating with patients.
- B6.5 Report patient's progress and response to treatment goals.
- B6.6 Maintain written guidelines of the Health Insurance Portability and Accountability Act (HIPAA) in all communications.
- B7.0 Apply observation techniques to detect changes in the health status of patients.**
- B7.1 Demonstrate observation techniques.
- B7.2 Differentiate between normal and abnormal patient health status.
- B7.3 Document the patient findings and report information appropriately.
- B7.4 Plan basic care procedures within the scope of practice to assist with patient comfort.
- B8.0 Demonstrate the principles of body mechanics as they apply to the positioning, transferring, and transporting of patients.**
- B8.1 Explain the principles of body mechanics.
- B8.2 Determine appropriate equipment for transportation and transfer, including the modification of equipment and techniques to accommodate the health status of the patient.
- B8.3 Demonstrate appropriate transport and transfer methods to accommodate the health status of the patient.
- B8.4 Evaluate equipment for possible hazards.
- B8.5 Integrate proper body mechanics, ergonomics, safety equipment, and techniques to prevent personal injury to patients and clients.
- B9.0 Implement wellness strategies for the prevention of injury and disease.**
- B9.1 Know and implement practices to prevent injury and protect health for self and others.
- B9.2 Determine effective health and wellness routines for health care workers (i.e., stress management, hygiene, diet, rest, and drug use).



- B9.3 Identify practices to prevent injuries and protect health, for self and others (i.e., seatbelts, helmets, and body mechanics).
- B9.4 Know how to access available wellness services (i.e., screening, exams, and immunizations).
- B9.5 Identify alternative/complementary health practices as used for injury and disease prevention.
- B9.6 Explore consequences of not utilizing available wellness services and behaviors that prevent injury and illness.
- B10.0 Comply with protocols and preventative health practices necessary to maintain a safe and healthy environment for patients, health care workers, co-workers, and self within the healthcare setting.**
- B10.1 Describe the infection control cycle with consideration of the various types of microorganisms.
- B10.2 Demonstrate use of facility policies and procedures of infection control while performing patient care.
- B10.3 Evaluate potential causes and methods of transmitting infections and how to apply standard precautionary guidelines.
- B10.4 Demonstrate the use of appropriate personal protective equipment (PPE).
- B10.5 Practice proper hand hygiene.
- B10.6 Use various manual and mechanical decontamination and sterilization techniques and procedures.
- B10.7 Document and analyze sanitation and infection control procedures.
- B11.0 Comply with hazardous waste disposal policies and procedures, including documentation, to ensure that regulated waste is handled, packaged, stored, and disposed of in accordance with federal, state, and local regulations.**
- B11.1 Describe basic emergency procedures used to respond to a hazardous spill.
- B11.2 Explain how waste is handled, packaged, stored, and disposed of in accordance with federal, state, and local regulations including hazardous chemicals, biohazards, and radioactive materials.
- B11.3 Adhere to the health care setting's waste management program (e.g., recycling and reduction of regulated medical, solid, hazardous, chemical, and radioactive waste materials).
- B11.4 Apply protective practices and procedure for airborne and blood-borne pathogens for equipment and facilities and identify unsafe conditions for corrective action.
- B12.0 Adhere to the roles and responsibilities, within the scope of practice, that contribute to the design and implementation of treatment planning.**
- B12.1 Understand scope of practice and related skills within prevention, diagnosis, pathology, and treatment occupations.
- B12.2 Describe the various roles and responsibilities of health care workers as team members in an integrated health care delivery system
- B12.3 Demonstrate the knowledge and delivery of specific skills and procedures as outlined within the scope of practice appropriate for patient care in prevention, diagnosis, pathology, and treatment.
- B12.4 Follow appropriate guidelines for implementation of various procedures.
- B13.0 Research factors that define cultural differences between and among different ethnic, racial, and cultural groups and special populations.**
- B13.1 Utilize culturally appropriate community resources.
- B13.2 Recognize complementary and alternative medicine as practiced within various cultures.
- B13.3 Develop ethnographic skills, by location and information retrieval, carefully observe social behavior, and manage stress and time.

- B13.4 Ask questions and explore aspects of global significance.
- B13.5 Analyze data using relevant concepts.
- B13.6 Know when and how to incorporate trained interpreters to facilitate communication and improve patient outcomes.

**Common Core State Standards**

**Reading Standards for Literacy in Science and Technical Subjects – RLST (Standard Area, Grade Level, Standard #)**

- RLST 11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text
- RLST 11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.
- RLST 11-12.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

**Writing Standards – WS – (Standard Area, Grade Level, Standard #)**

- WS 11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- WS 11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- WS 11-12.8 Gather relevant information from multiple authoritative print and digital sources (primary and secondary) using advanced searches effectively; assess the strengths and limitations of each source in terms of task, purpose and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citations including footnotes and endnotes.
- WS 11-12.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

**Next Generation Science Standards:**

**Scientific and Engineering Practices**

- SEP 2 Developing and using models
- SEP 3 Planning and carrying out investigations
- SEP 4 Analyzing and interpreting data
- SEP 7 Engaging in argument from evidence
- SEP 8 Obtaining, evaluating, and communicating information

**Disciplinary Core Ideas**

- LS 1.D: Information Processing
- LS 2.D: Social Interactions and Group Behavior