



Australian Government

HLTDET016 Design digital dental restorations and appliances using computer-aided design (CAD)

Release: 1

HLTDET016 Design digital dental restorations and appliances using computer-aided design (CAD)

Modification History

Not applicable.

Application

This unit of competency describes the skills and knowledge required to design dental restorations and appliances using computer-aided design (CAD) technologies.

This unit applies to dental technicians working in dental laboratories.

The skills in this unit must be applied in accordance with Commonwealth and State/Territory legislation, Australian/New Zealand Standards and industry codes of practice.

Pre-requisite Unit

Nil

Competency Field

Dental

Unit Sector

Dental technology

Elements and Performance Criteria

<i>Elements describe the essential outcomes</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine restoration or appliance requirements.	1.1 Access and interpret work order. 1.2 Apply standard infection control precautions when receiving, handling and working on dental materials. 1.3 Ensure accuracy of work order and seek additional information as required. 1.4 Assess quality of impression, model or intraoral scan and seek any required adjustments. 1.5 Scan physical impression, model or download intraoral scan and create digital representation of impression. 1.6 Identify technologies and computer-aided design (CAD) software required to complete digital design of restoration or appliance, and ensure availability.

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| 2. Design restoration or appliance using computer-aided design (CAD). | <ul style="list-style-type: none">2.1 Access required technologies and computer-aided design (CAD) software.2.2 Follow workplace policies and procedures to access and import digital impression files into computer-aided design (CAD) software.2.3 Create 3-D images by manipulating 3-D shapes.2.4 Establish coordinate system and orientation according to work order.2.5 Manipulate computer-aided design (CAD) software features and functions to create digital design of restoration or appliance.2.6 Apply rendering techniques to digital design of restoration or appliance. |
| 3. Finalise digital design for manufacturing. | <ul style="list-style-type: none">3.1 Ensure digital design of restoration or appliance accurately reflects requirements of work order.3.2 Make any final adjustments to ensure integrity and accuracy of digital design.3.3 Ensure digital design is available in format required for manufacturing.3.4 Finalise digital design for production and store according to workplace requirements. |

Foundation Skills

Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed below.

SKILLS	DESCRIPTION
Reading skills to:	interpret technical language within various texts.
Oral communications skills to:	pronounce complex words correctly and use them in the correct context.
Self-management skills to:	work within parameters of own scope of practice.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705>

Assessment Requirements for HLTDET016 Design digital dental restorations and appliances using computer-aided design (CAD)

Modification History

Not applicable.

Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role. There must be evidence that the candidate has:

- read and correctly interpreted four work orders
- used computer-aided design (CAD) software and technologies to prepare four digitally designed restorations or appliances, one of which must be a unit of crown and bridge work. The remaining three must be selected from two of the following categories:
 - prosthetics
 - chrome casting
 - orthodontics
 - splints
- applied infection control precautions and safe work practices to prepare the above four digital restoration or appliance designs
- critically evaluated the above four digital restoration or appliance designs to meet requirements of the work order.

Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- Australian/New Zealand Standards, workplace health and safety (WHS) policies, Dental Board of Australia guidelines on infection control, Commonwealth legislation and State/Territory legislation, and organisational policies relating to dental laboratory work
- requirements and organisational policies relating to dental laboratory work including:
 - use of standard infection control precautions
 - use of personal protective equipment
 - requirements for the use of technologies and computer-aided design (CAD) software
 - requirements for storage of digital designs
 - work health and safety
- benefits and limitations of computer-aided design (CAD) in digital dentistry
- commonly used types of computer-aided design (CAD) technologies used in the dental industry
- digital design processes and procedures

- digital design file types
- digital and physical impressions and properties
- types of digital restorations and appliances
- properties of restoration and appliance material applicable to computer-aided manufacturing (CAM) and the applicability of each material
- computer-aided manufacturing types and processes commonly used in digital dentistry
- fundamentals of oral anatomy:
 - dentition – arrangement of teeth, naming and coding of teeth
 - structures of the oral cavity – hard and soft palate, lateral and posterior borders of the oral cavity, tongue and floor of mouth
 - teeth form and function.

Assessment Conditions

Skills must have been demonstrated in a dental laboratory workplace or in a simulated dental laboratory environment that reflects workplace laboratory conditions. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources:
 - access to a variety of work orders
 - digital and/or physical impressions or models
 - computer-aided design (CAD) software and technologies commonly used within the dental industry
 - Dental Board of Australia guidelines on infection control on which the candidate bases the planning process
 - laboratory safety manuals and procedures in line with relevant Commonwealth and State/Territory legislation.

Assessors must satisfy the standards for registered training providers' requirements for assessors.

Links

Companion Volume Implementation Guide -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705>