



Western Technical College

31508309 Dental Laboratory Procedures

Course Outcome Summary

Course Information

Description	Prepares Dental Assistant students to produce alginate impressions and fabricate diagnostic models, oral appliances, temporary restorations, and custom trays. Students also polish oral appliances.
Career Cluster	Health Science
Instructional Level	Technical Diploma Courses
Total Credits	4
Total Hours	144

Pre/Corequisites

Prerequisite 10508113 Dental Materials

Textbooks

Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists. 4th Edition. Copyright 2021. Hatrick, Carol Dixon. Publisher: Elsevier Science. **ISBN-13:** 978-0-323-59658-9. Required.

Learner Supplies

Safety Glasses. **Vendor:** Campus Shop. Required.

Lab Coat. **Vendor:** To be discussed in class. Required.

Utility Gloves. **Vendor:** To be discussed in class. Required.

Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Cultivate Passion: Increase Self-Awareness
3. Live Responsibly: Develop Resilience
4. Live Responsibly: Embrace Sustainability
5. Live Responsibly: Foster Accountability
6. Refine Professionalism: Act Ethically
7. Refine Professionalism: Improve Critical Thinking
8. Refine Professionalism: Participate Collaboratively
9. Refine Professionalism: Practice Effective Communication

High Impact Practices

1. Community Based Learning Project: a key learning outcome of this course is to connect academic learning and civic development while simultaneously addressing a community partner's needs, interests, or problems.

Program Outcomes

1. DA-1 year: Manage infection and hazard control
2. DA-1 year: Perform advanced dental laboratory procedures
3. DA-1 year: Demonstrate professional behaviors, ethics, and appearance

Course Competencies

1. Produce detailed alginate impressions of a quality for case presentation models.

Assessment Strategies

- 1.1. by loading, seating, and removing the impression tray, to obtain a detailed alginate impression, on a patient in a clinic setting
- 1.2. by preparing and taking a bite registration on a patient in a clinic setting

Criteria

You will know you are successful when

- 1.1. you select the correct equipment and supplies needed to produce an alginate impression.
- 1.2. you prepare a bite registration.
- 1.3. you take maxillary and mandibular alginate impressions.
- 1.4. you perform all steps in the right order.
- 1.5. you position yourself correctly.
- 1.6. you wear personal protective equipment.
- 1.7. you follow safety procedures.
- 1.8. you verbalize an explanation of the process as you perform it.
- 1.9. you disinfect bite registration and alginate impressions.
- 1.10. you store and label the bite registration and alginate impressions correctly.
- 1.11. you ensure the alginate impressions and bite registration meet published specifications.
- 1.12. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 1.a. Use dental terminology related to alginate impressions appropriately.
- 1.b. Review the armamentarium and materials used in producing alginate impressions.
- 1.c. Discuss the aspects of patient preparation for an alginate impression.
- 1.d. Sequence the steps in producing an alginate impression.

- 1.e. Identify the criteria needed for a detailed alginate impression.
- 1.f. Evaluate impression using stated criteria.
- 1.g. Describe the disinfection technique for alginate impressions.
- 1.h. Explain the various materials and techniques for taking a bite registration.
- 1.i. Identify the waxes used when producing alginate impressions.
- 1.j. Identify the personal protective equipment required.
- 1.k. Select appropriate communication skills throughout the dental procedure.
- 1.l. Identify appropriate aseptic techniques used when producing alginate impressions.
- 1.m. Determine safety procedures to follow during producing an alginate impression.

2. Produce finished and polished diagnostic models of quality for case presentation.

Assessment Strategies

- 2.1. by fabricating a set of diagnostic models poured from an impression of a peer/patient in the clinic
- 2.2. by trimming the fabricated diagnostic models
- 2.3. by using a bite registration in trimming models
- 2.4. by finishing and polishing the trimmed diagnostic models
- 2.5. when models are of a quality for case presentation

Criteria

You will know you are successful when

- 2.1. you select the correct equipment and supplies needed to trim, finish, and polish study models.
- 2.2. you perform all steps in the right order.
- 2.3. you wear personal protective equipment.
- 2.4. you follow safety procedures.
- 2.5. you ensure models meet the criteria for evaluating trimmed, finished, and polished case presentation models.
- 2.6. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 2.a. Use dental terminology related to models appropriately.
- 2.b. Review the armamentarium and materials used in fabricating models.
- 2.c. Identify the criteria needed for an acceptable model.
- 2.d. Sequence the steps in fabricating models.
- 2.e. Evaluate fabricated models using stated criteria.
- 2.f. Describe the disinfection technique for models.
- 2.g. Identify the personal protective equipment required.
- 2.h. Determine safety procedures to follow when fabricating models.

3. Fabricate custom impression trays.

Assessment Strategies

- 3.1. by fabricating custom impression trays on models in the laboratory

Criteria

You will know you are successful when

- 3.1. you select the correct equipment and supplies needed to fabricate custom impression trays.
- 3.2. you perform all steps in the right order.
- 3.3. you wear personal protective equipment.
- 3.4. you follow safety procedures.
- 3.5. you ensure the custom impression trays meet the criteria for evaluation.
- 3.6. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 3.a. Use dental terminology related to custom impression trays appropriately.
- 3.b. Describe the characteristics and properties of polymers.
- 3.c. Identify the armamentarium and materials used in fabricating custom impression trays.
- 3.d. Explain the purpose of a custom impression trays.
- 3.e. Compare the use of a custom impression tray with a stock tray.
- 3.f. Identify the waxes used when fabricating custom impression trays.
- 3.g. Explain the purpose of the spacer and occlusal stops in a custom impression tray.
- 3.h. Identify the criteria needed for an acceptable custom impression tray

- 3.i. Sequence the steps in fabricating various custom impression trays.
- 3.j. Evaluate fabricated custom impression trays using stated criteria.
- 3.k. Describe the disinfection technique for custom impression trays.
- 3.l. Identify the personal protective equipment required.
- 3.m. Determine safety procedures to follow when fabricating custom impression trays.

4. Polish oral appliances.

Assessment Strategies

- 4.1. by polishing any acrylic-based appliance using a dental lathe in the laboratory

Criteria

You will know you are successful when

- 4.1. you select the correct equipment and supplies needed to polish oral appliances.
- 4.2. you perform all steps in the right order.
- 4.3. you wear personal protective equipment.
- 4.4. you follow safety procedures.
- 4.5. you ensure the polished oral appliance meets the criteria for evaluation.
- 4.6. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 4.a. Use dental terminology related to polishing oral appliances appropriately.
- 4.b. Identify the armamentarium and materials used in polishing oral appliances.
- 4.c. Differentiate among the various polishing agents.
- 4.d. Identify the criteria needed for an acceptable polished oral appliance.
- 4.e. Sequence the steps in polishing oral appliances.
- 4.f. Evaluate polished oral appliance using stated criteria.
- 4.g. Describe the disinfection technique when polishing oral appliances.
- 4.h. Identify the personal protective equipment required.
- 4.i. Determine safety procedures to follow when polishing oral appliances.

5. Prepare preformed provisional tooth coverage.

Assessment Strategies

- 5.1. by preparing a preformed provisional crown in a laboratory setting, using the models provided

Criteria

You will know you are successful when

- 5.1. you select the correct equipment and supplies needed to prepare preformed provisional tooth coverage.
- 5.2. you perform all steps in the right order.
- 5.3. you wear personal protective equipment.
- 5.4. you follow safety procedures.
- 5.5. you ensure the provisional coverage meets the criteria for evaluating preformed provisional tooth coverage.
- 5.6. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 5.a. Use dental terminology related to preformed provisional tooth coverage appropriately.
- 5.b. Describe the characteristics and properties of polymers.
- 5.c. Compare the various types of materials used for preformed provisional tooth coverage.
- 5.d. Identify the armamentarium and materials used in preparing preformed provisional tooth coverage.
- 5.e. Identify the criteria needed for a preformed provisional tooth coverage.
- 5.f. Sequence the steps in preparing preformed provisional tooth coverage.
- 5.g. Evaluate prepared preformed provisional tooth coverage using stated criteria.
- 5.h. Describe the disinfection technique for preformed provisional tooth coverage.
- 5.i. Identify the personal protective equipment required.
- 5.j. Determine safety procedures to follow when preparing preformed provisional tooth coverage.

6. Prepare custom provisional tooth coverage.

Assessment Strategies

- 6.1. by preparing a custom temporary crown or bridge, in a laboratory setting, using the models provided

Criteria

You will know you are successful when

- 6.1. you select the correct equipment and supplies needed to prepare custom provisional tooth coverage.
- 6.2. you perform all steps in the right order.
- 6.3. you wear personal protective equipment.
- 6.4. you follow safety procedures.
- 6.5. you ensure the provisional coverage meets the criteria for evaluating custom provisional tooth coverage.
- 6.6. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 6.a. Use dental terminology related to custom provisional tooth coverage appropriately.
- 6.b. Describe the characteristics and properties of polymers.
- 6.c. Compare the various types of materials used for custom provisional tooth coverage.
- 6.d. Identify the armamentarium and materials used in preparing custom provisional tooth coverage.
- 6.e. Identify the criteria needed for a custom provisional tooth coverage.
- 6.f. Sequence the steps in preparing custom provisional tooth coverage.
- 6.g. Evaluate prepared custom provisional tooth coverage using stated criteria.
- 6.h. Describe the disinfection technique for custom provisional tooth coverage.
- 6.i. Identify the personal protective equipment required.
- 6.j. Determine safety procedures to follow when preparing custom provisional tooth coverage.

7. Explain the indications, procedure, and benefits of indirect restoration to a patient.

Assessment Strategies

- 7.1. in an oral, written or graphic assessment

Criteria

You will know you are successful when

- 7.1. you describe the indications for at least three indirect restorations (choose from crowns, inlays, bridges, dentures, partials, or porcelain).
- 7.2. you describe the difference between temporary restoration and permanent restoration.
- 7.3. you describe the benefits of at least three types of indirect restorations (choose from crowns, inlays, bridges, dentures, partials, or porcelain).
- 7.4. you describe how the impression is used to create a cast and how the cast is used to create a restoration.
- 7.5. you describe the fabrication procedure and timeline for at least three types of indirect restorations (choose from crowns, inlays, bridges, dentures, partials, or porcelain).

Learning Objectives

- 7.a. Use dental terminology related to dental laboratory procedures appropriately.
- 7.b. Describe the disinfection process used on incoming laboratory cases.
- 7.c. Describe the preparation procedures used for incoming laboratory cases.
- 7.d. Describe the steps of denture fabrication.
- 7.e. Describe the steps of the casting process.
- 7.f. Describe the types of alloys used to fabricate all metal, ceramometal crowns and partial denture framework.
- 7.g. Describe the types of porcelain used in prosthodontics.
- 7.h. Describe the steps of fabricating a porcelain restoration.

8. Articulate models.

Assessment Strategies

- 8.1. by preparing maxillary and mandibular models for articulation, in a laboratory setting, using the models provided
- 8.2. by articulating prepared models
- 8.3. by using a bite registration for articulating models

Criteria

You will know you are successful when

- 8.1. you select the correct equipment and supplies needed to articulate models.

- 8.2. you perform all steps in the right order.
- 8.3. you wear personal protective equipment.
- 8.4. you follow safety procedures.
- 8.5. you ensure the articulated models meet the criteria for evaluation.

Learning Objectives

- 8.a. Explain the purpose of articulating models.
- 8.b. List components for articulating a set of models.
- 8.c. Evaluate articulated models using stated criteria.

9. Produce bite registration.

Assessment Strategies

- 9.1. by producing a bite registration, in a clinic setting, on a peer/patient

Criteria

You will know you are successful when

- 9.1. you select the correct equipment and supplies needed to produce a bite registration.
- 9.2. you perform all steps in the right order.
- 9.3. you wear personal protective equipment.
- 9.4. you follow safety procedures.
- 9.5. you ensure the bite registration meet the criteria for evaluation.
- 9.6. you verbalize an explanation of the process as you perform it.
- 9.7. you disinfect bite registration.
- 9.8. you ensure patient's records show accurate, up-to-date documentation of treatment and services.

Learning Objectives

- 9.a. Identify the armamentarium and materials used in taking a bite registration.
- 9.b. Identify the criteria needed for an acceptable bite registration.
- 9.c. Evaluate the bite registration using stated criteria.

10. Prepare laboratory case for shipment.

Assessment Strategies

- 10.1. by completing laboratory prescription for laboratory case, according to provided scenario
- 10.2. by collecting models, impression and bite registration for laboratory case
- 10.3. by packaging laboratory case
- 10.4. by preparing laboratory case for shipment

Criteria

You will know you are successful when

- 10.1. you select the correct items needed to prepare a laboratory case for shipment, according to provided scenario.
- 10.2. you perform all steps in the right order.
- 10.3. you wear personal protective equipment.
- 10.4. you follow safety procedures.
- 10.5. you ensure the laboratory case meets the criteria for evaluation.
- 10.6. you properly notify the laboratory of case pick-up/ mailing.

Learning Objectives

- 10.a. Explain the process of preparing a laboratory case for shipment.