



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Health Professions

COURSE: DLA 2201 Dental Lab Procedures II

Date: Fall 2023

Credit Hours: 1

Complete all that apply or mark "None" where appropriate:

Prerequisite(s): DLA 1201 with a C or higher

Enrollment by assessment or other measure? Yes No

If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor: Yes No

Delivery Method:	<input type="checkbox"/> Lecture	0 Contact Hours (1 contact = 1 credit hour)
	<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> Lab	3 Contact Hours (2-3 contact = 1 credit hour)
	<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)

Offered: Fall Spring Summer

CATALOG DESCRIPTION and IAI NUMBER (if applicable):

This course is designed to continue the hands-on skills related to the dental materials currently used in the dental office and is a continuation of DLA 1201. Teeth whitening materials and procedures, as well as fabrication of bleaching trays, mouth guards and other corrective oral appliances are discussed and demonstrated. Polymers used in dentistry in the fabrication of dentures will be discussed and demonstrated chairside and in laboratory procedures as necessary for fixed and removable prosthodontics. Provisional restorations will be discussed, and fabricated using several different techniques appropriate to the situation.

ACCREDITATION STATEMENTS AND COURSE NOTES:

The curriculum must include content at the in-depth level in dental materials. Students must demonstrate knowledge of the properties, and competence in the uses and manipulation of, dental materials to include:

- a. Gypsum
- b. Restorative materials
- c. Dental cements
- d. Impression materials
- e. Acrylics and or thermoplastics
- f. Waxes
- g. Fabrication of casts, temporary crown and/or bridge
- h. Abrasive agents used to polish coronal surfaces and appliance
- i. Study casts/occlusal registrations

COURSE TOPICS AND CONTENT REQUIREMENTS:

- I. Crown and Bridge Models
 - a. Required anatomy
 - b. Trimming
 - c. Using lab handpiece
 - d. Filling voids
- II. Bleaching Trays
 - a. Taking the impression
 - b. Pouring model
 - c. Trimming model
 - d. Block out material
 - e. Using Vacuum former
 - f. Scalloped trim
 - g. Patient fit and comfort
- III. Night Guards
 - a. Impression
 - b. Trimming
 - c. Placement
- IV. Orthodontic Appliances
 - a. Palatal retainers
 - i. Acrylic
- V. Abrasion, Finishing and Polishing
- VI. Custom Trays
 - a. Hand mix
 - b. Pre-formed trays
 - c. Edentulous Impressions/Rubber Mold
 - d. Preparation of model
 - e. Baseplate wax
 - f. Spacers
- VII. Bite Registration
 - a. Blue
 - b. Clear
 - c. Triple tray
- VIII. Preliminary impressions
 - a. Putty wash PVS

- b. Clear bite
 - c. Alginate impressions
- IX. Final Impressions
 - a. Polyvinyl Siloxane (PVS)
 - b. Polyether
- X. Provisional Restorations
 - a. Polycarbonate
 - b. Acrylic
 - c. Splint
 - d. Cementation
- XI. Model Trimming
 - a. Precision Trim
 - b. Round Trim
 - c. Orthodontic Finish

INSTRUCTIONAL METHODS:

- Demonstration
- Hands-on learning

EVALUATION OF STUDENT ACHIEVEMENT:

- Projects
- Skills assessment
- Quizzes
- Demonstration

INSTRUCTIONAL MATERIALS:

Textbooks

Materials Laboratory Manual

Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists,
Eakle, 4th Edition, 2021

Resources

Evolve Elsevier Resources

YouTube Demonstration Videos recorded by IVCC Dental Faculty.

LEARNING OUTCOMES AND GOALS:

Institutional Learning Outcomes

- 1) Communication – to communicate effectively;
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
- 4) Responsibility – to recognize how personal choices affect self and society.

Course Outcomes and Competencies

- 1. Crown and Bridge Models
 - 1.1. Required anatomy
 - 1.2. Trimming
 - 1.3. Using lab handpiece

- 1.4. Filling voids
2. Bleaching Trays
 - 2.1. Describe how whitening materials penetrate the tooth.
 - 2.2. Explain the differences between professionally supervised home whitening and over-the-counter (OTC) systems.
 - 2.3. Describe the precautions to take to protect the oral tissues when applying in-office power whitening products.
 - 2.4. Compare the whitening materials used for in-office, take home, and OTC home use.
 - 2.5. List the potential side effects of home whitening.
 - 2.6. Describe the methods to whiten nonvital teeth.
 - 2.7. Discuss the relative effectiveness of whitening products and whitening toothpastes in removing stains from teeth.
 - 2.8. List the steps in the procedures for in-office power whitening.
 - 2.9. Fabricate home whitening trays.
 - 2.10. Demonstrate to a patient how home whitening products are used.
 - 2.11. Describe clinical situations in which enamel microabrasion might be used.
 - 2.12. Explain how enamel microabrasion works.
3. Mouth Guards
 - 3.1. Describe the uses of mouth guards.
 - 3.2. List the materials for the fabrication of mouth guards.
 - 3.3. Explain to a patient how to care for a mouth guard.
 - 3.4. Fabricate a sports mouth guard.
 - 3.5. Describe what obstructive sleep apnea is.
 - 3.6. Describe the use of oral appliances to prevent snoring or obstructive sleep apnea.
4. Orthodontic Appliances
 - 4.1. Explain how space maintainers prevent the drifting of teeth and loss of space.
 - 4.2. Describe how thermoplastic orthodontic aligners work.
 - 4.3. Fabricate acrylic palatal retainer
5. Demonstrate an advanced understanding of Abrasion, Finishing and Polishing
 - 5.1. Define abrasion, finishing, polishing, and cleaning.
 - 5.2. Discuss the purpose of finishing, polishing, and cleaning of dental restorations and tooth surfaces.
 - 5.3. Identify and discuss the factors that affect the rate and efficiency of abrasion.
 - 5.4. Compare the relative ranking of abrasives on restorations and tooth structures.
 - 5.5. Describe methods by which dental abrasives are applied.
 - 5.6. Discuss the contraindications to the use of abrasives on tooth structure and restorations.
 - 5.7. Describe the clinical decisions made to determine which abrasive to use when finishing, polishing, or cleaning dental restorations or tooth structures.
 - 5.8. Describe the abrasives and the procedures used for finishing and polishing metals, composite, and porcelain.
 - 5.9. Describe the abrasives and the procedures used for polishing and cleaning metals, composite, ceramic, and gold alloys as part of oral prophylaxis.
 - 5.10. Describe the safety and infection control precautions taken by the operator when using abrasives.
 - 5.11. Relate the instructions given to patients to prevent and remove stain from tooth surfaces and restorations.

- 5.12. Finish and polish a preexisting amalgam restoration.
- 5.13. Polish a preexisting composite restoration.
- 6. Demonstrate skills required to create functional Custom Trays
 - 6.1. List the important properties of acrylic resins.
 - 6.2. Fabricate custom impression trays for upper and lower arches.
 - 6.3. Fabricate record bases for complete dentures, using light-cured material.
- 7. Demonstrate knowledge of denture repair or relines.
 - 7.1. Explain the importance of control of heat and pressure when processing a denture.
 - 7.2. Compare the properties of hard and soft lining materials.
 - 7.3. List the indications for long- and short-term soft liners.
 - 7.4. Compare the advantages and disadvantages of chairside and laboratory-processed hard liners.
 - 7.5. List the indications for the use of acrylic denture teeth versus porcelain teeth.
 - 7.6. Know the steps involved in repairing a broken acrylic denture.
- 8. Bite Registration
 - 8.1. Blue
 - 8.2. Clear
 - 8.3. Triple tray
- 9. Preliminary impressions
 - 9.1. Putty wash PVS
 - 9.2. Clear bite
 - 9.3. Alginate impressions
- 10. Final Impressions
 - 10.1. Polyvinyl Siloxane (PVS)
 - 10.2. Polyether
- 11. Demonstrate a basic understanding of Provisional Restorations
 - 11.1. Explain the purpose of provisional coverage.
 - 11.2. Describe examples of circumstances that may require provisional coverage.
 - 11.3. Identify the criteria necessary for a high-quality provisional restoration.
 - 11.4. Describe the properties of provisional materials.
 - 11.5. Distinguish among properties that are important for posterior coverage, anterior coverage, and both anterior and posterior coverage.
 - 11.6. Distinguish between intracoronal and extracoronal restorations.
 - 11.7. Summarize the advantages and disadvantages of preformed and custom crowns.
 - 11.8. Differentiate among direct, indirect, and vacuum former fabrication techniques.
 - 11.9. Summarize the advantages and disadvantages of acrylic and bis-acrylic composite provisional materials.
 - 11.10. Describe the technique for fabrication of metal, polycarbonate, custom, and cement provisional restorations.
 - 11.11. Summarize patient education and home care instructions.
 - 11.12. Fabricate and cement a metal provisional crown.
 - 11.13. Fabricate and cement a polycarbonate crown.
 - 11.14. Fabricate and cement a custom provisional crown.
 - 11.15. Place an intracoronal cement temporary restoration.
- 12. Model Trimming
 - 12.1. Precision Trim
 - 12.2. Round Trim
 - 12.3. Orthodontic Finish