



*ILLINOIS VALLEY COMMUNITY COLLEGE*

**COURSE OUTLINE**

**DIVISION: Workforce Development**

**COURSE: DLA 2201- Dental Lab Procedures II**

Date: Spring 2019

Credit Hours: 2.0

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

Delivery Method:

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

Offered:  **Fall**     **Spring**     **Summer**

**CATALOG DESCRIPTION:**

This course stresses physical properties and applications of metals used in dentistry as well as dental porcelain and dental polymers. Chairside and laboratory procedures necessary for fixed and removable prosthodontics will be studied and practiced.

## GENERAL EDUCATION GOALS ADDRESSED

*[See last page for Course Competency/Assessment Methods Matrix.]*

### Upon completion of the course, the student will be able:

*[Choose up to three goals that will be formally assessed in this course.]*

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciate diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

### EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

*[Outcomes related to course specific goals. See last page for more information.]*

#### Upon completion of the course, the student will be able to:

#### 1. Demonstrate a basic understanding of the composition and use of dental golds and nonprecious alloys.

- 1.1 Identify the basic physical properties of metals.
- 1.2 Differentiate the composition and properties of high noble, noble, and base metal alloys.
- 1.3 Compare the composition, properties, and uses of metals used for casting partial denture frameworks.
- 1.4 Explain the composition, use, and properties of solder.
- 1.5 Discuss the metals used for orthodontic brackets, band, wires, implants, posts, and endodontic files/reamers.

#### 2. Demonstrate a basic understanding of the types, selection, composition, and uses of dental porcelain.

- 2.1 Explain the various uses of dental porcelain.
- 2.2 Identify the components of dental porcelain.
- 2.3 Describe the types of porcelain used in dentistry.
- 2.4 Explain the classifications of dental porcelain.
- 2.5 Explain laminate veneers - know advantages, indications for veneers, know types of veneers used in dentistry, and procedures involved.

#### 3. Demonstrate a basic understanding of the laboratory procedures necessary to fabricate temporary and permanent fixed prosthetic appliances.

- 3.1 Fabricate/fit a metal, polycarbonate, and custom provisional restoration.

- 3.2 List and explain the steps in the construction of a wax pattern through the casting and finishing of a full veneer crown, an inlay or onlay, and a ceramic veneer crown.
- 3.3 Describe the process of applying a porcelain veneer to a casting.
- 3.4 List the information that must be included on a work order for the dental technician to fabricate a fixed prosthetic appliance.
- 3.5 Describe the functions of a pontic and how it relates to fixed bridgework.

**4. Demonstrate a basic understanding of removable prosthetic procedures.**

- 4.1 Discuss the intra- and extraoral factors that influence the consideration for fixed prostheses.
- 4.2 Differentiate between various types of removable prostheses.
- 4.3 Outline the typical appointment schedule for common removable prostheses.
- 4.4 Define the components of a removable prosthesis.
- 4.5 Describe the role of the chairside assistant in the preparation and delivery of removable prostheses.
- 4.6 Describe the basic procedural steps necessary to create a removable prosthesis.
- 4.7 Describe home care for removable prostheses.
- 4.8 Clean and polish removable prostheses.
- 4.9 Describe various types of overdentures and the functions they provide.
- 4.10 Define the various types of implants and describe the implant process.

**5. Demonstrate a basic understanding of the types and mouth guards and trays and indicate their common uses.**

- 5.1 Discuss the types of mouth protectors available and the fabrication process of each type.
- 5.2 Describe the methods used to bleach teeth.
- 5.3 Explain the differences between professionally supervised home bleaching and over-the-counter systems.
- 5.4 Fabricate custom trays for home bleaching.

**6. Demonstrate a basic understanding of the types, selection, properties, and manipulation of plastics in prosthetics.**

- 6.1 List the properties of plastics.
- 6.2 Identify the various applications of plastics in dentistry.
- 6.3 Discuss the composition and polymerization of plastics.
- 6.4 Discuss the manipulation and processing procedures for the various types of plastics.

**7. Demonstrate a basic understanding of the types, selection, composition, and manipulation of dental waxes.**

- 7.1 Describe the composition, form and primary uses of the following waxes: inlay wax, casting wax, baseplate wax, boxing wax, utility wax, and sticky wax.
- 7.2 Identify the properties of waxes and their clinical/laboratory significance.
- 7.3 Differentiate between direct and indirect waxings and identify which property of dental waxes is most important in their difference.
- 7.4 Manipulate dental waxes in the laboratory to complete assigned projects.

7.5 Obtain a bite registration using bite registration wax.

**MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS**

*[For each of the goals selected above, indicate which outcomes align with the goal.]*

<b>Goals</b>	<b>Outcomes</b>
First Goal	
To understand and use technology effectively and to understand its impact on the individual and society.	1.4, 1.5, 3.1, 3.2, 3.3, 3.4, 3.5

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

### **I. Gold and nonprecious alloys**

- A. Properties of metals
- B. Dental golds
  - 1. Direct filling gold
  - 2. Casting gold alloys
- C. Cobalt - chromium alloys
- D. Palladium - silver alloys
- E. Nickel alloys
- F. Titanium alloys
- G. Composition and use of alloys
- H. Wrought metals

### **II. Dental porcelain**

- A. Uses of dental porcelain
  - 1. Denture teeth
  - 2. Jacket crowns
  - 3. Bridge work
  - 4. Inlays, onlays
  - 5. Veneers
- B. Composition
- C. Types of porcelain
  - 1. Core/opaque layer
  - 2. Incisal
  - 3. Gingival
- D. Classification of porcelain
- E. Color
- F. Porcelain crowns
- G. Laminate veneers

### **III. Fixed prosthetics**

- A. Construction and placement of temporary crown
- B. Laboratory procedures
  - 1. Pouring impressions
  - 2. Articulating casts
  - 3. Wax pattern construction
  - 4. Investing wax pattern
  - 5. Removal of sprue
  - 6. Burn-out of wax pattern
  - 7. Casting
  - 8. Pickling, finishing, polishing
- C. Use of pontic
- D. Ceramic veneer crowns
  - 1. Construction of casting
  - 2. Application of ceramic veneer

### **IV. Removable prosthodontics**

- A. Intra oral and extra oral factors

- B. Types of removable prostheses
- C. Components of removable prostheses
- D. Role of the dental assistant
- E. Appointment sequence for removable prostheses
- F. Laboratory procedures
- G. Overdentures
- H. Implants

V. Mouth Guards and Trays

- A. Mouth protectors
  - 1. Types
  - 2. Composition
  - 3. Fabrication process
- B. Desensitizing agents
  - 1. Composition
  - 2. Indications for use
- C. Bleaching methods
  - 1. In-office bleaching
  - 2. Home bleaching
  - 3. Over-the-counter bleaching

VI. Plastics in Prosthetics

- A. Types of plastics
- B. Properties of plastics
- C. Uses of plastics
- D. Composition and polymerization of plastics
- E. Manipulation and processing of plastics

VII. Dental Waxes

- A. Composition of waxes
- B. Manipulation of waxes
- C. Classifications of waxes
  - 1. Pattern
    - a. Inlay
    - b. Casting
    - c. Baseplate
  - 2. Processing
    - a. Boxing
    - b. Utility
    - c. Sticky
  - 3. Impression
    - a. Bite registration
    - b. Corrective
  - 4. Use of waxes

**INSTRUCTIONAL METHODS:**

- Lecture

- Class discussion
- Demonstrations
- Laboratory projects
- Exams and quizzes
- Actual practice using dental materials and equipment
- Class trips

### **INSTRUCTIONAL MATERIALS:**

- Textbooks
  - Dental Materials: Clinical Applications for Dental Assistants and Dental Hygienists, Hatrick & Eakle, 3<sup>rd</sup> Edition, 2016
  - Laboratory manual 2018-2019

### **STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

Lecture: Reading assigned materials, note taking and participation in classroom discussion is expected.

Written examinations are used to evaluate student progress following each unit. A comprehensive final exam will be given at the end of the semester. All of the grades from these exams will be averaged equally to determine the student's final lecture grade.

Laboratory: Students are required to wear white lab coats in the laboratory and follow the posted rules.

All skills must be successfully completed by the student to pass the lab portion, and for continuation in the Dental Assisting Program. If any skill is left incomplete at the end of the semester, the student will receive a 'D' in the laboratory portion and will not pass DLA 2201.

Quizzes will be given to evaluate student comprehension.

Laboratory performance notes will be kept by the instructor for each student.

Final Grade: A grade of a 'C' is required in BOTH the lecture portion and in the laboratory portion of this course for graduation from the Dental Assisting Program. If a student does not receive a 'C' in one portion of the course, their grade will be posted as a 'D' and the student must retake the course the following year. The students' final grade will be calculated as follows:

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

Students are responsible for the cleanliness of the laboratory and must follow the posted laboratory rules.

The student's final grade will be calculated: 50% lecture; grade 50% laboratory grade

# Course Competency/Assessment Methods Matrix

(Dept/# Course Name)	Assessment Options																																
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment	
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D							
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																	
Demonstrate a basic understanding of the composition and use of dental gold and nonprecious alloys				X				X	X			X		X						X			X	X	X	X	X	X	X				X
Demonstrate a basic understanding of the types, selection, composition and uses of dental porcelain				X				X	X			X		X						X			X	X	X	X	X	X	X				X
Demonstrate a basic understanding of the laboratory procedures necessary to fabricate temporary and permanent fixed prosthetic appliances				X				X	X			X		X						X			X	X	X	X	X	X					X



