

**DH 76 Course Outline as of Fall 2011****CATALOG INFORMATION**

Dept and Nbr: DH 76

Title: DENT MATRLS FOR DENT HYG

Full Title: Dental Materials for the Dental Hygienist

Last Reviewed: 11/28/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00

Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

The study of the science and use of dental materials, where students will gain knowledge of the basic science, behavior, and manipulation of dental materials in a framework that enables adaptation to the rapidly evolving array of new dental materials and techniques in the professional arena.

**Prerequisites/Corequisites:**

Course Completion of DH 70 and DH 71A

**Recommended Preparation:****Limits on Enrollment:**

Acceptance to Allied Dental Program

**Schedule of Classes Information:**

Description: The study of the science and use of dental materials, where students will gain knowledge of the basic science, behavior, and manipulation of dental materials in a framework that enables adaptation to the rapidly evolving array of new dental materials and techniques in the professional arena. (Grade Only)

Prerequisites/Corequisites: Course Completion of DH 70 and DH 71A

Recommended:

Limits on Enrollment: Acceptance to Allied Dental Program

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective: Fall 1999	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Major Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

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

1. Describe the characteristics of dental materials related to: classes of dental materials, structure, physical characteristics, mechanical characteristics, and biologic characteristics.
2. Identify dental (restoration/prosthesis) examples of each type of class of material.
3. Assess specific materials by comparing the actual characteristics to the ideal characteristics for materials to be used within the mouth to repair or replace oral tissues.
4. Perform the steps necessary to place either a light-curing or self-curing sealant when presented with a client who has explorer-detectable deep pits and fissures.
5. Identify the technique steps and associated rationales for amalgam finishing and polishing.
6. Describe the clinical technique for the appropriate handling and manipulation of an alginate impression material proportioning, mixing, placement and removal of tray from mouth, pouring and separation of the cast.
7. Compare the composition and properties of the materials used as luting cements.
8. Describe the procedure for placement and finishing of a temporary or interim restoration.

### **Topics and Scope:**

1. Characteristics and classification of dental materials
  - a. metals
    - I. amalgam
    - II. gold crown
    - III. gold inlay/onlay
    - VI. bridge gold/porcelain/fused-to-metal
  - b. ceramics
    - I. porcelain cast ceramic onlay
    - II. cast ceramic crown
  - c. polymers

- I. dentures
- II temporary acrylic bridge
- III. pit and fissure sealant
- VI. esthetic composite restoration
- 2. Structure of materials
  - a. bonding
  - b. atomic arrangements
- 3. Physical characteristics
  - a. thermal and electrical properties
  - b. solubility and absorption
  - c. adhesion
  - d. color and esthetics
  - e. corrosion
- 4. Mechanical characteristics
  - a. types of forces
  - b. stress and strain
  - c. other properties
- 5. Biologic characteristics
- 6. Characteristics of the ideal dental material
  - a. biocompatible
  - b. stable
  - c. minimal thermal and electrical conductivity
  - d. esthetic
  - e. easy to manipulate
  - f. adhere to tissues
  - g. tasteless and odorless
  - h. cleanable/repairable
  - i. cost effective
- 7. Considerations related to health and safety issues
  - a. Occupational Safety Hazard Association (OSHA) communication standards
  - b. prevention of disease transmission protocols for related client care procedures
  - c. protection of the environment--disposal of hazardous materials
- 8. Sealant types
  - a. application principles and methods
  - b. tooth selection
  - c. comparison of sealant systems
  - d. applying sealants
    - I. equipment
    - II. operational equipment dependent on sealant system
    - III. infection control protocol
- 9. Sealent techniques
  - a. extrinsic stain and plaque removal
  - b. isolation and drying
  - c. acid conditioning
  - d. sealant placement
  - e. post application inspection
  - f. retention
  - g. follow-up evaluation
- 10. Amalgam
  - a. uses
  - b. mixing and handling
  - c. setting reaction

- d. characteristics and properties
- e. clinical success
- f. finishing procedures
- g. factors affecting finishing
- h. polishing
  - I. composition of abrasives
  - II. prophylaxis pastes, dentifrices and denture cleansers
- i. margination
- j. infection control protocol for finishing and polishing amalgam restorations
- 11. Impression materials
  - a. uses in dentistry
  - b. composition
    - I. inelastic materials
    - II. elastic materials/hydrocolloid
    - III. reversible hydrocolloid (agar)
  - c. irreversible hydrocolloid (alginate)
    - I. equipment
    - II. proportioning
  - d. mixing
  - e. filling tray and taking impression
  - f. clean-up and disinfection
  - g. infection control protocol
- 12. Cements
  - a. uses
  - b. types
  - c. handling and placement
  - d. characteristics
  - e. infection control protocols
- 13. Temporary restorative
  - a. uses of temporary restoratives in dental and dental hygiene
  - b. types of temporary restorations
    - I. zinc oxide eugenol
    - II. acrylic
    - III. aluminum crowns
  - c. single tooth temporary
  - d. infection control protocol

### **Assignment:**

- 1. Laboratory projects (4-8)
- 2. Written exams (5-10)
- 3. Midterm
- 4. Final exam
- 5. Performance exams (3-5)

### **Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None

Problem solving  
0 - 0%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances and performance exams.

Skill Demonstrations  
40 - 60%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, midterm and final: Multiple choice, case studies, and true/false

Exams  
40 - 60%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

### **Representative Textbooks and Materials:**

Clinical Applications for Dental Assistants and Dental Hygienists, Hatrick, C., Eakle, Bird, D., 2nd Ed., 2010

Clinical Practice of the Dental Hygienist, Wilkins, E., Lippincott, Williams, Wilkins, 10th Ed., 2010

Modern Dental Assisting, Torres, Ehrlich, Bird and Robinson, 10th Ed., W.B. Saunders, 2011