

DH 76 Course Outline as of Fall 1999**CATALOG INFORMATION**

Dept and Nbr: DH 76

Title: DENT MAT FOR DENTAL 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. Students will gain knowledge of the basic science, behavior, and manipulation of dental materials within a framework which will enable them to adapt to the rapidly evolving array of new dental materials and techniques in the professional arena.

Prerequisites/Corequisites:

Course Completion of DH 70 and Course Completion of DH 71A (or DH 71)

Recommended Preparation:**Limits on Enrollment:****Schedule of Classes Information:**

Description: The study of the science and use of dental materials. Students will gain knowledge of the basic science, behavior, and manipulation of dental materials within a framework which will enable them to adapt 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 Course Completion of DH 71A (

or DH 71)

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;

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

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1999
		Inactive:	
UC Transfer:		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:

- A. Describe the characteristics of dental materials related to: classes of dental materials, structure, physical characteristics, mechanical characteristics, and biologic characteristics.
- B. Identify dental (restoration/prosthesis) examples of each type of class of material.
- C. 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.
- D. 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.
- E. Identify the technique steps and associated rationales for amalgam finishing and polishing.
- F. 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).
- G. Describe the type of cements useful for a special application as a periodontal dressing.
- H. Compare the composition and properties of the materials used as luting cements.
- I. Describe the procedure for placement and finishing of a temporary or interim restoration such as zinc oxide eugenol temporary restorative material.

Topics and Scope:

A. Characteristics of Dental Materials

1. Classes of Materials

a. Metals

- (1) amalgam
- (2) gold crown
- (3) gold inlay/onlay
- (4) bridge - gold/porcelain-fused-to-metal

b. Ceramics

- (1) porcelain-cast ceramic onlay
- (2) cast ceramic crown

c. Polymers

- (1) dentures
- (2) temporary acrylic bridge
- (3) pit and fissure sealant
- (4) esthetic composite restoration (e.g.molar)

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. Mechanically Stable and Durable

c. Resistant to Corrosion or Chemicals

d. Dimensionally Stable

e. Minimal Thermal and Electrical Conductivity

f. Esthetic

g. Easy to Manipulate

h. Adhere to tissues

i. Tasteless and Odorless

j. Cleanable/Repairable

k. Cost Effective

7. Considerations Related to Health and Safety Issues

a. Occupational Safety (Hazard Communications Standard-OSHA)

b. Prevention of Disease Transmission--Protocols for Related Client Care Procedures

c. Protection of the Environment--Disposal of Hazardous Materials

B. Sealants

1. Types of Sealant Materials

a. comparison of sealant systems

2. Application Principles and Methods
3. Tooth Selection
4. Applying Sealants
 - a. equipment
 - b. Operational equipment dependent on sealant system
 - c. Infection Control Protocol
5. Technique Steps and Rationale
6. Extrinsic Stain and Plaque Removal
7. Isolation and Drying
8. Acid Conditioning
9. Sealant Placement
10. Post Application Inspection
11. Retention
12. Follow-up Evaluation
- C. Amalgam
 1. Uses
 2. Mixing and Handling
 3. Setting Reaction
 4. Characteristics and Properties
 5. Clinical Success
 6. Finishing Procedures
 7. Factors Affecting Finishing
 8. Polishing
 - a. Composition of abrasives
 - b. Prophylaxis pastes, dentifrices and denture cleansers
 9. Margination
 10. Infection Control Protocol for Finishing and Polishing Amalgam Restorations
- D. Impression Materials
 1. Uses in Dentistry
 2. Composition
 - a. Inelastic materials
 - b. Elastic materials: hydrocolloid
 - (1) Reversible hydrocolloid (agar)
 - (2) Irreversible hydrocolloid (alginate)
 - a) Equipment
 - b) Proportioning
 - c) Mixing
 - d) Filling tray and taking impression
 - e) Clean-up and disinfection
 - c. Elastic materials: elastomers
 - (1) Polysulfide
 - (2) Condensation silicone
 - (3) Polyether
 - (4) Addition silicone
 3. Infection Control Protocol--Impression Materials
- E. Cements
 1. Uses of Cements
 2. Types of Cements
 3. Handling and Placement of Cements
 4. Characteristics of Cements
 5. Infection Control Protocol--Cements

- F. Temporary Restoratives
 - 1. Uses of Temporary Restoratives in Dental and Dental Hygiene Care
 - 2. Types of Temporary Restoratives
 - a. Zinc oxide eugenol
 - b. Acrylic
 - c. Aluminum crowns, composites, bold
 - 3. Mixing and Placing an Acrylic Temporary Bridge
 - 4. Temporary Restorative
 - a. single tooth temporary
 - b. temporary bridge
 - 5. Infection Control Protocol--Temporary Restorations
- G. Implants

Assignment:

Laboratory projects
Written assignments

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 problem solving assessments and 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.

Homework problems, Quizzes, Exams, Skills

Problem solving
25 - 45%

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

Class performances, Field work, Performance exams

Skill Demonstrations
10 - 30%

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

Multiple choice, True/false, Matching items, Completion

Exams
15 - 45%

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

Professionalism: See file for criteria used for evaluation

Other Category
10 - 45%

Representative Textbooks and Materials:

Dental Hygiene Theory & Practice. Darby. M. and Walsh, M. WB Saunders,
Philadelphia, 1996

Periodontal Instrumentation, Pattison, A. and Pattison, G., Norwalk:
Appleton and Lange, 1992

Clinical Practice of the Dental Hygienist 7th Ed.. Wilkins, E.M., Malvern:
Williams & Wilkins. 1990

SUPPLEMENTARY TEXT: Medical Emergencies in the Dental Office, 4th Ed.,
St. Louis, CV Mosby, 1993