

DH 76 Course Outline as of Fall 2017**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:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:

IGETC:	Transfer Area	Effective:	Inactive:
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CSU Transfer:	Transferable	Effective:	Fall 1999	Inactive:
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UC Transfer:		Effective:		Inactive:
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CID:

Certificate/Major Applicable:

Major Applicable Course

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Describe the principles of dental materials and the rationale for their use.
2. Apply the knowledge of these principles through clinical and laboratory procedures.

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 the characteristics of dental materials and their biocompatibility with the oral tissues.
3. Describe and recognize dental stains and the rationale for selective coronal polish.
4. Identify the components of abrasive agents for removal of dental stains including the indications and contraindications for their use.
5. Perform selective coronal polishing procedures for the removal of stains and soft deposits.
6. Identify components and materials used for fixed and removable restorations and orthodontic appliances and the indications for their use.
7. Describe the rationale for sealant placement and the indications for its use.
8. Perform the steps necessary to place a light-curing or self-curing sealant when presented with a patient who has explorer-detectable deep pits and fissures.
9. Identify the properties and components of metal and esthetic restorative materials and the indications for their use.
10. Identify the technique steps and associated rationales for amalgam and esthetic restorative finishing and polishing.
11. Identify and describe the properties of alginate impression and gypsum materials including the physical, chemical characteristics and manipulation.
12. Demonstrate 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 with gypsum.

13. Describe the materials contained within dental whitening systems as well as their indications and contraindications.
14. Demonstrate the correct method for the fabrication of a whitening tray including patient instructions.
15. Identify the composition and properties of dental cements and indications for their use.
16. Discuss the science behind partial caries removal and minimally invasive dentistry.
17. Demonstrate effective placement of interim therapeutic restorations on hypodont teeth.

Topics and Scope:

I. Characteristics and Classification of Dental Materials

- A. Structure of materials
- B. Physical characteristics
- C. Mechanical characteristics
- D. Biologic characteristics

II. Characteristics for the Ideal Dental Material

- A. Biocompatibility
- B. Stability
- C. Minimal thermal and electrical conductivity
- D. Esthetics
- E. Ease of manipulation
- F. Adherence to tissues
- G. Tasteless and odorless
- H. Cleanable and repairable
- I. Cost effective

III. Dental Stains and the Rationale for Selective Coronal Polish

- A. Types of stains
- B. Causes of stains
- C. Indications and contraindications

IV. Abrasive Agents for Removal of Dental Stains

- A. Properties of polishing agents
- B. Ranking of abrasiveness
- C. Indications and contraindications

V. Selective Coronal Polishing Procedures*

- A. Identification of plaque and stains
- B. Identification of restorations
- C. Identification of unsound dentition
- D. Areas of Modification
- E. Technique
- F. Infection control protocol

VI. Fixed and Removable Restorations and Orthodontic Appliances*

- A. Identification of appliances
- B. Components of fixed, removable, and orthodontic appliances
- C. Risk factors
- D. Care implications

VII. Indications and Technique for Sealants*

- A. Application principles and methods
- B. Tooth selection
- C. Comparison of sealant systems
- D. Extrinsic stain and plaque removal
- E. Isolation and drying
- F. Acid conditioning

- G. Sealant placement
- H. Post application inspection
- I. Follow-up evaluation
- VIII. Metal and Esthetic Restorative Materials*
 - A. Mixing and handling
 - B. Setting reaction
 - C. Characteristics and properties
 - D. Clinical success
- IX. Finishing and Polishing Amalgam and Esthetic Restorations*
 - A. Finishing procedures
 - B. Factors affecting finishing
 - C. Polishing
- X. Alginate Impression and Gypsum Materials
 - A. Uses in dentistry
 - B. Composition of alginate and gypsum
 - C. Working time
 - D. Setting time
 - E. Affecting factors
- XI. Technique for Handling and Use of Alginate and Gypsum Materials*
 - A. Equipment
 - B. Operator and patient positioning
 - C. Preparation and loading of trays
 - D. Mixing alginate
 - E. Making a gypsum model
 - F. Infection control protocol
- XII. Dental Whitening Systems
 - A. Content
 - B. Uses
 - C. Indications and contraindications
 - D. In-office versus home systems
- XIII. Whitening Tray and Patient Instructions*
 - A. Impressions
 - B. Model fabrication
 - C. Tray fabrication
 - D. Shade selection
 - E. Patient instructions
 - F. Infection control protocol
- XIV. Dental Cements
 - A. Uses
 - B. Types
 - C. Handling and placement
 - D. Characteristics
- XV. Minimally Invasive Dentistry
 - A. Understanding of Caries Management By Risk Assessment (CAMBRA)
 - B. Visual examination
 - C. Caries detection through radiographs
 - D. Criteria on tooth factors and patient qualifications
 - E. Understand follow-up evaluation
- XVI. Interim Therapeutic Restorations on Typodont Teeth*
 - A. Instruments and material used
 - B. Handling of materials
 - C. Preparation of teeth

- D. Conditioning
- E. Placement of material
- F. Post application inspection

*These items are introduced in lecture, and the related skill is performed in the lab.

XVII. Laboratory/Clinical Competencies

- A. Perform coronal polish on student partner
- B. Perform alginate impression technique on student partner
- C. Produce a study model from alginate impression
- D. Produce a whitening tray from study model
- E. Polish amalgam and composite restorations on a typodont
- F. Demonstrate the care of removable and fixed prosthetic and orthodontic appliances
- G. Perform sealant techniques on typodonts and student partners
- H. Perform interim therapeutic restoration procedures on typodonts

Assignment:

Lecture:

1. Reading 20-40 pages per week
2. 5-8 quizzes, 1 midterm, and 1 final exam

Laboratory:

1. 8-10 lab exercises
2. 3-5 homework assignments
3. 3-5 performance exams
4. Lab final

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.

Homework

Writing
5 - 10%

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.

Lab exercises and performance exams.

Skill Demonstrations
40 - 55%

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

Quizzes, midterm, lecture final, and lab final

Exams
40 - 55%

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. 3rd. Hatrick, Carol and Eakle, Stephan. Elsevier. 2015

Dental Hygiene, Theory and Practice. 4th ed. Darby, Michele and Walsh, Margaret. Elsevier. 2014

Modern Dental Assisting. 11th ed. Bird, Doni and Robinson, Debbie. Elsevier. 2015

Instructor prepared materials