

Montgomery County Community College  
DHG 224  
Materials in Dentistry  
2-1-3

**COURSE DESCRIPTION:**

This course is designed to provide students with a survey of dental materials and procedures, their reasons for use, proper technique and dental application. The scope of study includes gypsum products, impression materials, dental cements, amalgam, synthetic resins, nightguard vital bleaching, athletic mouthguards, prosthetics, finishing and polishing of restorations, pit and fissure sealants, digital photography and advanced instrumentation. Laboratory sessions provide students with hands-on experience with selected dental material procedures and instrumentation. This course is subject to a course fee. Refer to <http://mc3.edu/adm-fin-aid/paying/tuition/course-fees> for current rates.

**REQUISITES:***Previous Course Requirements*

- DHG 158 Theory and Practice of Central Hygiene II
- DHG 159 Histology and Pathology Oral Tissues
- DHG 161 Periodontics I

*Concurrent Course Requirements*

- DHG 225 Oral Pharmacology
- DHG 226 Dental Pain Control

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Explore the basic properties, principles, advantages, disadvantages and use of common dental materials.	Online Presentations Selected Readings Blackboard Group Activities Practice Observation Paper Laboratory Experiences	Discussion Questions Tests Exams Laboratory Evaluations
2. Apply knowledge to patient education and in dental hygiene assessment and treatment procedures.	Laboratory Experiences Selected Readings Blackboard Group Activities	Discussion Questions Tests Exams Laboratory Evaluations

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
3. Demonstrate proper manipulation and application of selected dental materials.	Online Presentations Selected Readings Video Presentations Classroom Activities Laboratory Experiences	Discussion Questions Tests Exams Laboratory Evaluations
4. Expose a series of intraoral photographs for documentation of patients' oral health status.	Laboratory Experiences	Laboratory Evaluations
5. Utilize basic principles of instrumentation and ergonomics to perform advanced instrumentation techniques.	Seminar Selected Readings Laboratory Experiences	Laboratory Evaluations

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

#### SEQUENCE OF TOPICS:

1. Course Introduction
2. Materials Science and Dentistry
3. Physical and Mechanical Properties of Dental Materials
4. Cavity Design/Nomenclature
5. Advanced Instrumentation
6. Digital Photography
7. Impression Materials and Custom Trays
8. Gypsum Materials/Study Models Dental Cements
9. Esthetic Restorative Materials/Adhesives
10. Pit and Fissure Sealants
11. Amalgam and Mercury Hygiene
12. Fixed Indirect Restorative Materials and Prostheses
13. Removable Prostheses/Acrylic Resin
14. Finishing and Polishing of Restorations
15. Clinical Detection and Management of Dental Restorative Materials During Scaling/Polishing
16. Radiographic Appearance of Dental Materials
17. Athletic Mouthguards
18. Vital & Non-Vital Tooth Whitening
19. Debonding Orthodontic Resins

## LEARNING MATERIALS:

Required Course Textbooks

Darby, M. and Walsh, M. (2015). *Dental Hygiene Theory and Practice* (4<sup>th</sup> ed.). Philadelphia: Saunders.

Gladwin, Marcia and Bagby, Michael. (2013). *Clinical Aspects of Dental Materials Theory, Practice, and Cases* (4<sup>th</sup> ed.). Baltimore: Lippincott, Williams & Wilkins.

Nield-Gehrig, Jill S. (2013). *Fundamentals of Periodontal Instrumentation & Advanced Root Instrumentation* (7<sup>th</sup> ed.). Baltimore: Lippincott, Williams & Wilkins.

Additional Resource Material

Darby, M. (2012). *Mosby's Comprehensive Review of Dental Hygiene* (7<sup>th</sup> ed.). St. Louis: Mosby.

Supplementary and Reference Textbooks in the Montgomery County Community College Library

## Other:

American Dental Association, *Chairside Instructor*

Clinic Handbook, Montgomery County Community College, 2017-2018

Course enhancement through the use of Blackboard: an online course management platform.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

## COURSE APPROVAL:

Prepared by: Jenny K. Sheaffer, RDH, M.S. Date: 4/15/1998

Revised by: Susan Doebling, RDH, M.S. Date: 9/11/2004

Revised by: Jenny Sheaffer, RDH, M.S. Date: 1/2009

VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr. Date: 9/11/2009

Revised by: Jenny Sheaffer, RDH, M.S. Date: 9/2009

VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr. Date: 4/27/2010

Revised by: Jenny Sheaffer Date: 10/16/2012

VPAA/Provost or designee Compliance Verification:  
Victoria L. Bastecki-Perez, Ed.D. Date: 11/1/2012

Revised by: Linda Teal Mercer Date: 12/18/2017

VPAA/Provost or designee Compliance Verification:  
Victoria L. Bastecki-Perez, Ed.D. Date: 1/8/2018

Revised by: Kimberly Beadencup Date: 2/20/2020

VPAA/Provost or designee Compliance Verification:  
Victoria L. Bastecki-Perez, Ed.D. Date: 2/26/2020

Revised by: Kimberly Beadencup  
VPAA or designee Compliance Verification:

Date: 3/1/2021  
Date: 3/10/2021

A handwritten signature in black ink, appearing to be 'K. Beadencup', written in a cursive style.

*This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.*