

Prepared by the Department of Health Sciences

Date of Departmental Approval: January 18, 2018

Date Approved by Curriculum and Programs: February 28, 2018

Effective: Fall 2018

1. **Course Number:** DEN209/DEN509
Course Title: Dental Materials/Dental Materials Lab

2. **Description:** A study of the science of dental materials including the physical, chemical, and biological properties, manipulation, and care of materials used in the prevention and treatment of oral disease. The scientific and clinical properties of gypsum materials, impression materials, waxes, cements, dental abrasives, resins, porcelains and metals used in dentistry are discussed in lecture and manipulated in laboratory sessions with special emphasis on the materials within the scope of the practice of Dental Hygiene.

3. **Student Learning Outcomes:** The student demonstrates knowledge and understanding of the properties and manipulation of biomaterials as they relate to the practice of Dental Hygiene.
 1. Recognize the physical properties of dental materials and apply the terms related to properties in comparing dental materials.
 2. Compare and contrast gypsum products in terms of properties, types, uses, and manipulation.
 3. Manipulate rigid and flexible impression materials to demonstrate the characteristics and properties of each.
 4. Manipulate a variety of waxes to demonstrate their composition, properties, characteristics, and application.
 5. Classify dental cements, and liners by their types, composition, properties, characteristics, clinical indications, manipulation and application.
 6. Classify direct and indirect esthetic composite restorative materials in terms of types, composition, properties, characteristics, and clinical applications of each.
 7. Categorize dental porcelains by their composition, chemistry, clinical applications and manipulation.
 8. Demonstrate current clinical techniques regarding maintenance of both composite and porcelain esthetic restorations within the scope of Dental Hygiene Practice.
 9. Relate mercury hygiene as it applies to current OSHA guidelines and environmental safe practices, including first aid and emergency protocols.
 10. Evaluate the use of dental amalgam in terms of type, composition, properties, and manipulation.
 11. Classify dental abrasives by their composition and properties, and relate this to the clinical application of amalgam polishing and denture cleaning.
 12. Summarize the classifications, types, properties, and characteristics of gold and non-precious materials as well as their clinical applications, shaping, and joining.
 13. Describe dental investing and casting techniques through discussion and visualization.
 14. Categorize synthetic laboratory resins in terms of types, composition, properties, characteristics, clinical application and manipulation.
 15. Categorize dentures and laboratory processed prosthetic resins in terms of properties and characteristics, chemistry and composition, clinical application, manipulation, processing, and care.
 16. Categorize preventive dental and specialty materials in terms of composition, properties and characteristics, clinical applications, manipulation, and fabrication.
 17. Compare and contrast the composition, materials, and indications for dental implants.
 18. Demonstrate preventive care and maintenance for dental implants.
 19. Assess evidenced based data regarding choice and ethical considerations of dental restorative materials.
 20. Compare and contrast whitening techniques, including indications and contraindications of each.

4. **Credits:** 3 credits

5. **Satisfies General Education Requirement:** No

6. **Prerequisites:** DEN123 (Dental Hygiene II) and DEN128 (Clinical Dental Hygiene II)

7. Semester(s) Offered: Fall

8. Suggested General Guidelines for Evaluation: Weekly quizzes, journal article research and review, midterm exam, and final exam. Students successfully passing the course must achieve a grade of C (75) or better, which are entered onto their college transcripts. Students must achieve a grade of C (75) or better to continue in the Dental Hygiene Program.

9. General Topical Outline (Optional):

DEN209. Dental Materials Lecture Outline

Week 1	Properties of Dental Materials
Week 2	Impression Materials
Week 3	Preventive Dental Materials Specialty Materials/Procedures
Week 4	Dental Cements, Liners
Week 5	Whitening
Week 6	Dental Gold Non-precious Metal Alloys
Week 7	Dental Amalgam
Week 8	Esthetic Dental Restorative Materials
Week 9	Esthetic Dental Restorative Materials, (cont.) Dental Porcelain
Week 10	Finishing, Polishing, and Cleaning Materials
Week 11	Synthetic Lab Resins Laboratory Processed Plastics
Week 12	Implants
Week 13	Waxes
Week 14	Review
TBA	Final Exam