DENTAL MATERIALS (DHYG 1219.2B1)

CREDIT
2 Semester Credit Hours (1 hours lecture, 3 hours lab)

MODE OF INSTRUCTION
Hybrid

PREREQUISITE/CO-REQUISITE:
Prerequisite: DHYG 1401, DHYG 1431, DHYG 1304, DHYG 1227
Co-Requisite: DHYG 1235, DHYG 1260, DHYG 1207

COURSE DESCRIPTION
DHYG 1219 is a study of the physical and chemical properties of dental materials including the application and manipulation of the various materials used in dentistry.

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

- Differentiate between the various types of dental materials and their respective properties.
- Manipulate materials used in dentistry.
- Demonstrate knowledge of the correct terminology in dealing with dental materials.
- Demonstrate safety practices in dealing with dental materials.

INSTRUCTOR CONTACT INFORMATION

Instructor:	Mrs. Cynthia Thompson, RDH, BS
Email:	cthompson@lit.edu
Office Phone:	TBA
Office Location:	MPC 207
Office Hours:	Appointments available upon request

REQUIRED TEXTBOOK AND MATERIALS
Gladwin, M. and Bagby, M. (2018) Clinical Aspects of Dental Materials. Jones & Bartlett Learning, 5th edition. ISBN: 978-1496360083

Boyd, Linda D., Mallonee, Lisa F., and Wyche, Charlotte J. (2021) Wilkins' Clinical Practice of the Dental Hygienist. Jones & Bartlett Learning, 13th edition. ISBN: 9781496396273

Approved: Initials/date

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
3rd Week of January	Introduction to Dental Materials Safety in the Laboratory	Read the Course Syllabus and Lab Manual	• Watch the 'Start Here' video • Submit Course Contract in Blackboard • Watch the 'Safety in the Laboratory' PowerPoint • Complete Safety in the Laboratory quiz by January 28th @ 10:00pm
1st Week of March			Module 1 and Module 2 to be completed by March 8th @10:00pm
March 7-8	Lab Practical #1		Test Open March 7-8
Last Week of April			Module 3 and 4 to be completed by May 3rd @ 10:00pm
May 2-3	Lab Practical #2		Test Open May 2-3

***All lecture course work will be asynchronous with 2 due dates. You can work at your own pace to finish the lecture portion of this course with the exception of the 2 due dates. Modules 1 and 2, along with Tests 1 and 2, must be completed by March 8, 2024. Modules 3 and 4, along with Tests 3 and 4, must be completed by May 3, 2024. You may work ahead and complete the lecture portion prior to May 3, 2024. If you do not submit your work or complete your exams by the due dates, this will result in a grade of '0'.**

All work must be completed in order to open the next section. You will have to complete Module 1 before Module 2 will open. The test in each module will open when the module course work is complete. You can test at any time. Each test is located inside each Lecture Module.

There will be no extra credit offered.

ATTENDANCE POLICY

Absenteeism

In order to ensure the students in the dental hygiene program achieve the necessary didactic and clinical competencies outlined in the curriculum, it is necessary that the student complete

all assigned lecture classes, clinical and laboratory hours. It is the responsibility of the student to attend class, clinic or lab. The instructor expects each student to be present at each session. It is expected that students will appear to take their exams at the regularly scheduled examination time. Make-up examinations will be given **only** if the absence is due to illness (confirmed by a physicians' excuse), a death in the immediate family, or at the discretion of the instructor.

If students are unable to attend lecture class, clinic or lab, it is **mandatory that you call the appropriate instructor prior to the scheduled class, clinic or lab time**. **An absence will be considered unexcused if the student fails to notify the course faculty prior to the start of class, clinic, or lab. Attendance through Blackboard Collaborate is considered an absence. The course instructor must be notified at least one hour prior to the beginning of class/lab if the student plans to attend through Blackboard Collaborate.** The student is responsible for all material missed at the time of absence. Extenuating circumstances will be taken into account to determine if the absence is excused. Extenuating circumstances might include but are not limited to funeral of immediate family member, maternity, hospitalization, etc. If the student has surgery, a debilitating injury, or an extended illness, a doctor's release will be required before returning to clinic.

a. **Fall/Spring Semesters:**
   Dental hygiene students will be allowed **two excused absences** in any lecture, clinic or lab. Absences must be accompanied by a written excuse on the next class day. In the event that a student misses class, clinic or lab beyond the allowed absences, the following policy will be enforced:
   2 absences = notification in Starfish
   Beginning with the third absence, **2 points** will be deducted from the final course grade for each absence thereafter.
   Two (2) points will be deducted from the final course grade for each unexcused absence.

Tardiness

Tardiness is disruptive to the instructor and the students in the classroom. A student is considered tardy if not present at the start of class, clinic or lab. It is expected that students will arrive on time for class, clinic or lab, and remain until dismissed by the instructor. If tardiness becomes an issue, the following policy will be enforced:

Tardy 1 time = notification in Starfish
Tardy 2 times = is considered an unexcused absence. (See the definition of an unexcused absence)

If a student is more than 15 minutes late to any class period, it will be considered an unexcused absence.

Students should plan on attending classes, labs and clinic sessions as assigned throughout the semester. Family outings, vacations and personal business should be scheduled when school is not in session and will not be considered excuses for missing assignments, examinations, classes, labs or clinic time.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified drop date as listed on the Academic Calendar. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

STUDENT EXPECTED TIME REQUIREMENT

For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16-week session OR approximately twelve to eighteen hours in an 8-week session. Online/Hybrid students should expect to spend at least as much time in this course as in the traditional, face-to-face class.

COURSE REQUIREMENTS

Lecture Requirements:

1. Test Requirements.

a. 4 Tests

2. Blackboard Class Assignments and Quizzes. You must log on to Blackboard to complete the assignments and quizzes. All assignments must be submitted through Blackboard.

a. 11 Assignments – Complete Assignments with Textbooks only, Clinical Aspects of Dental Materials and/or Wilkins' Clinical Practice of the Dental Hygienist

b. 1 quiz (Safety in the Laboratory)

Lab Requirements: For all lab requirements and due dates, please refer to the lab manual. Skill evaluations and Worksheets must be uploaded into both Lecture and Lab sections.

1. Skill evaluations. Successful completion of the following skill evaluations is required for completion of the course: Pit & Fissure Sealant Placement, Desensitization of Hard Tissue, Placement and Removal of Periodontal Dressing, Suture Removal, Instrument Sharpening.

2. Lab Practical Exams. Two lab practical examinations will be given during the course of the semester over topics covered in the laboratory.

3. Worksheets. Completion of all laboratory assignments are mandatory for completion of the course.

4. Safety. The appropriate safety principles and equipment **must** be utilized during the laboratory sessions. The equipment may include gloves, safety glasses, face masks, and lab coats. Unless specified, this equipment must be worn during lab.

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Lecture Grade Determination:	
Test Average	60%
Assignments/Quizzes	15%
Laboratory Grade Determination:	
Skill Evaluations	Completion
Lab Practical Exams	20%

Worksheets	5%

GRADING SCALE

A = 92 - 100
B = 83 - 91
C = 75 – 82
D = 60 - 74
F = 59 and below

LIT does not use +/- grading scales

ACADEMIC DISHONESTY

Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty.

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at https://lit.edu/online-learning/online-learning-minimum-computer-requirements. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at Special Populations - Lamar Institute of Technology (lit.edu).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

Assignment, Examination and Quiz Policy

Examinations will be based on objectives, lecture notes, handouts, assigned readings, audiovisual material and class discussions. Major examinations will consist of multiple choice, true/false, matching, short answer, and case study questions. No questions will be allowed during exams.

Students are expected to complete examinations as scheduled. Make-up examinations will be given ONLY if the absence is due to illness (confirmed by a physicians' excuse), a death in the immediate family, or at the discretion of the Instructor. All make-up examinations must be taken within two (2) weeks from the scheduled exam date. All examinations will be kept on file by the Instructor. Students may have access to the examination by appointment during the Instructor's office hours. Exams may be reviewed up to two (2) weeks following the exam date. **You may not copy, reproduce, distribute or publish any exam questions**. This action may result to dismissal from the program. A grade of "0" will be recorded for all assignments due on the day of absences unless prior arrangements have been made with the Instructor.

Students must use their personal equipment, such as computer, MacBook, laptop, iPad, to take their exams and must not use their classmates'. School computers may be used if personal equipment is not available. Respondus Lockdown Browser and Respondus Monitor will be used for examinations therefore, a webcam is required to take the exam. The student is required to show the testing environment at the beginning of the exam to assure the instructor that it is clear of any study materials. Failure to do so will result in a 10-point exam grade deduction. If you need online assistance while taking the test, please call Online Support Desk at 409-951-5701 or send an email to lit-bbsupport@lit.edu.

It shall be considered a breach of academic integrity (cheating) to use or possess on your body any of the following devices during any examination unless it is required for that examination and approved by the instructor: cell phone, smart watch/watch phone, electronic communication devices (including optical), and earphones connected to or used as electronic

communication devices. It may also include the following: plagiarism, falsification and fabrication, use of A.I., abuse of academic materials, complicity in academic dishonesty, and personal misrepresentation. Use of such devices during an examination will be considered academic dishonesty. The examination will be considered over, the student will receive a zero for the exam and will receive disciplinary action. This policy applies to assignments and quizzes.

Students with special needs and/or medical emergencies or situations should communicate with their instructor regarding individual exceptions/provisions. It is the student's responsibility to communicate such needs to the instructor.

Mandatory Tutoring

If a student receives a failing grade on any major exam, the student will be required to meet with course instructor within 2 weeks of the failed exam. One on one concept review by appointment with the course instructor will be provided and/or written academic warning when a student is failing to meet minimal requirements in the classroom setting.

Electronic Devices

Electronic devices are a part of many individual's lives today. Students must receive the instructor's permission to operate electronic devices in the classroom and lab. Texting on cell phones will not be allowed during class, clinic or lab.

Late coursework

Assignments, Quizzes and Tests must be completed by the due date. Late submissions or completion will not be accepted and will result in a zero for that assignment/quiz/test.

Remediation

Remediation is available by appointment.
See Student Handbook for more information about remediation policies.

*** Faculty has the authority to modify the above policies if unusual circumstances mandate a change. Please refer to the Student Handbook for a complete listing of program policies.**

COURSE OUTLINE

I. Introduction
   a. Rationale for Studying Dental Materials
   b. Biomaterials and the Oral Environment
   c. History and Selection of Dental Materials
   d. Standards for Dental Materials
   e. Classification of Dental Materials
   f. Classification of Dental Caries and Restorations

II. Materials Science and Dentistry
   a. Materials Science
   b. Atomic Bonding
   c. Materials and Their Atomic Bonds

III. Physical and Mechanical Properties of Dental Materials
   a. Properties of Materials
   b. Physical Properties
   c. Mechanical Properties

IV. Adhesive Materials

a. Adhesive Materials in Dentistry
b. Acid Etching
c. Dentinal Bonding
d. Glass Ionomers
e. Uses of Bonding in Dentistry

V. Direct Polymeric Restorative Materials
a. Acrylic Resins
b. Inhibitors and Competing Reactions
c. Problems with Unfilled Resins
d. Improvements to Dental Resins
e. Composite Materials
f. Glass Ionomer Materials
g. Compomers
h. Selecting Restorative Materials

VI. Amalgam
a. What is Dental Amalgam?
b. Advantages of Using Dental Amalgam
c. History of Dental Amalgam
d. Low-copper Dental Amalgam
e. High-copper Dental Amalgam
f. Factors Affecting Handling and Performance
g. Amalgam Properties
h. Use of Dental Amalgam
i. Direct Gold Restorations

VII. Dental Cements
a. Use of Dental Cements
b. Chemistry of Dental Cements
c. Powders Used in Dental Cements
d. Liquids Used in Dental Cements
e. Powder/Liquid Ratios and Systems of Dental Cements
f. ZOE Cement
g. Zinc Phosphate Cement
h. Glass Ionomer Cements
i. Polycarboxylate Cement
j. Composite Cements
k. Other Dental Cements and Cement Uses

VIII. Impression Materials
a. Impression Materials
b. Plaster
c. Wax and Impression Compound
d. Zinc-Oxide Eugenol (ZOE)
e. General Aspects of Hydrocolloid Impression Materials
f. Alginate Impression Materials
g. Agar
h. General Aspects of Nonaqueous Elastomeric Impression Materials
i. Polysulfides
j. Polyethers
k. Addition Silicones

IX. Gypsum Materials
a. Gypsum Materials
b. Types of Gypsum Products
c. Setting Reaction
d. Water/Powder Ratio
e. Setting Time
f. Setting Expansion
g. Strength
h. Surface Hardness
i. Dimensional Stability
j. Technique of Use

X. Materials for Fixed Indirect Restoration and Prostheses
a. Classification by Amount of Tooth Structure Restored
b. Classification by Material
c. Procedures for Constructing an Indirect Restoration
d. Casting Process
e. Alloys for All-Metal Cast Restorations
f. Titanium
g. Partial Denture Frameworks
h. Ceramic Restorative Materials
i. Advantages/Disadvantages of All-Metal/Ceramometal/Ceramic Restorations

XI. Removable Prostheses and Acrylic Resins
a. Acrylic Resins
b. Acrylic Resin Systems Used in Dentistry
c. Complete Dentures
d. Constructing a Complete Denture
e. Partial Dentures
f. Relining a Denture
g. Immediate Dentures
h. Repairing Acrylic Prostheses or Appliances
i. Handling Acrylic Devices

XIII. Specialty Materials
a. Orthodontic Materials
b. Endodontic Materials
c. Periodontal and Other Surgical Materials
d. Pediatric Dentistry

XIV. Clinical Detection and Management of Dental Restorative Materials During Scaling and Polishing
a. Clinical Detection of Tooth Structure and Dental Restorative Materials
b. Management of Restorative Dental Materials During Scaling and Polishing
c. Suggestions for Polishing Specific Restorative Materials

XVI. Polishing Materials and Abrasion
a. Definitions
b. Types of Abrasives
c. Bonded and Coated Abrasives
d. Factors Affecting the Rate of Abrasion
e. The Polishing Process

COURSE OBJECTIVES

Upon completion of the objectives in the following chapters, the student will be able to:

CHAPTER 1: INTRODUCTION

1. Summarize the reasons why a dental hygienist should be knowledgeable in the science of dental materials.
2. Discuss some of the conditions that make the oral cavity a hostile environment.
3. Identify four characteristics or properties a dental material must possess to survive in the oral environment.
4. Explain how the following organizations evaluate and/or classify dental drugs, materials, instruments, and equipment: American Dental Association, U.S. Food and Drug Administration, International Standards Organization
5. Name three ways dental materials may be classified, and discuss each.
6. Specifically discuss the locations of all six cavity classifications and the appropriate restorative material to be used for each. Include the following in your discussion:
   - Anterior and/or posterior
   - Involvement of incisal angle
   - Involvement of proximal surface
   - Smooth surfaces versus pit and fissures

CHAPTER 2: MATERIALS SCIENCE AND DENTISTRY

1. List the phases into which materials are classified. Discuss the varying amounts of attraction between the molecules and atoms of each phase. Recall the differentiating characteristics of each phase.
2. Explain the basic difference between primary and secondary bonds.
3. Name the three types of primary bonds, and describe the differences between them.
4. Summarize the similarities and differences of secondary bonds, which include permanent dipoles, hydrogen bonds, and fluctuating dipoles.
5. Contrast the bonding characteristics of metals, ceramics, polymers, and composites.

CHAPTER 3: PHYSICAL AND MECHANICAL PROPERTIES OF DENTAL MATERIALS

1. Describe or define the key words and phrases.
2. Relate the physical properties of materials discussed in this chapter to their use in dentistry.
3. Define wetting. Include in the definition a drop of liquid and the contact angle formed with the surface.
4. Name the units of measure for the following properties:
   - Density
   - Heat capacity
   - Stress
   - Strain
   - Modulus of elasticity
5. Define "proportional limit," and name two other nearly equivalent terms.
6. Name the four types of stress, and provide an example of each found in everyday life.
7. Compare the properties of "toughness" and "hardness" and provide examples.
8. Explain the difference between stress relaxation and creep.
9. Discuss the phenomenon of stress concentration, and compare its effects on a poorly placed amalgam restoration as well as on a properly placed one.

CHAPTER 4: ADHESIVE MATERIALS

1. Describe an "adhesive".
2. Explain the difference between micromechanical bonding and macromechanical bonding,

and provide an example of each type.
3. Recall three benefits the patient receives from restorations that are bonded to tooth structure.
4. Compare the differences of the microanatomy of enamel and of dentin regarding etching and bonding. The comparison should include the following terms: Orthophosphoric acid, enamel tags, smear layer, Hybrid layer, Primer, Adhesive.
5. Discuss two of the earlier fallacies about dentinal bonding and how research has changed current practice.
6. Summarize the main differences between glass ionomer cements and dentinal bonding.

CHAPTER 5: DIRECT POLYMERIC RESTORATIVE MATERIALS

1. Name the two types of polymerization reactions commonly seen in dental materials, and explain the meaning of "addition" in "addition polymerization".
2. Discuss the following properties of restorative resins: Polymerization shrinkage, Coefficient of thermal expansion, Abrasion resistance
3. Summarize the relationship between a filler particle, the matrix, and the coupling agent of a composite restorative material.
4. Compare the advantages and disadvantages of light-activated and chemical activated composite materials.
5. Explain the importance of proper eye protection when light-curing dental materials.
6. Relate the importance of the following procedures and/or characteristics of dental composites: Depth of cure, Addition of material in increments, Inhibition by air, Unreacted C=C bonds, Shades, Shortcomings of the matrix
7. Summarize the importance of the following properties in relation to the fillers (particles) found in dental composites: Composition, Size, Amount, Abrasion resistance, Refractive index, Clinical detection
8. Choose one the three types of dental composites, and justify its use in the following dental situations: Bonding orthodontic brackets to enamel, Class V "gingival notch" restoration, small Class I or II restoration
9. Briefly explain the reason(s) for the development of flowable and condensable composites.
10. Describe "preventive resin restoration" and "composite cements".
11. Assess the positive and negative characteristics of light-cure and chemical-cure glass ionomer cements.
12. Discuss the similarities between compomers, glass ionomers, and composites.

CHAPTER 6: AMALGAM AND DIRECT GOLD

1. Differentiate between an amalgam alloy and a dental amalgam.
2. Describe the composition of conventional and high-copper dental amalgams.
3. Describe the function (effects) of the major elements of dental amalgams.
4. Describe the self-sealing property of amalgam.
5. Describe the following shapes of amalgam alloy particles: lathe cut, spherical, blend or admix
6. Describe the effect of moisture contamination on amalgam.
7. Describe acceptable mercury hygiene practices.
8. Describe the use and advantages of direct gold restorations.

CHAPTER 7: DENTAL CEMENTS

1. Describe the use of dental cements as a: Luting agent, Base, Filling material, Temporary restoration, Intermediate restoration, Periodontal pack, Temporary cement.
2. Explain the importance of adhesion and microleakage to the clinical use of dental cement.
3. Differentiate between a base and a liner.
4. Describe the use of a cavity varnish or cavity sealer.

5. Describe the differences between the two cement powders and three cement liquids.
6. Explain the setting reaction of a typical dental cement.
7. Based on the properties of the liquid and the powder, discuss the properties of: Zinc oxide-eugenol cement, Zinc phosphate cement, Polycarboxylate cement, Glass ionomer cement, Composite cement, Calcium hydroxide base.
8. Summarize the mixing process for the first four cements in objective #7 and how it relates to the setting reaction.
9. Describe the use and advantages of a composite cement.

CHAPTER 8: IMPRESSION MATERIALS

1. Describe the use of impression materials during indirect restorative procedures.
2. List the oral structures from which impressions are made.
3. Differentiate between a model, a cast, and a die.
4. Describe the various types of impression trays.
5. List the desirable qualities of an impression material.
6. Differentiate between: Elastic and inelastic impression materials, Reversible and irreversible impression materials.
7. Describe the composition and setting mechanism of: Wax and impression compound, Zinc oxide-eugenol, Agar, Alginate, Polysulfides, Condensation silicones, Polyethers, Addition silicones.
8. Compare the properties, use, and cost of the above impression materials.
9. Describe the effect of water temperature on the setting rate of alginate.
10. Describe the effect of water and heat on the setting rate of polysulfides.

CHAPTER 9: GYPSUM MATERIALS

1. Define the following terms: study model, cast, and die.
2. Discuss the major differences between dental plaster, stone, and improved stone.
3. Explain the meaning of initial and final setting times.
4. Give three examples of how to increase and decrease the setting times of gypsum products.
5. Discuss wet and dry strength as it relates to gypsum products.
6. Summarize the recommended technique for use of gypsum products for measuring, mixing, and filling the impression.

CHAPTER 10: MATERIALS FOR FIXED INDIRECT RESTORATION AND PROSTHESES

1. Discuss the factors that affect treatment planning for a fixed indirect restoration.
2. Explain the lost-wax casting process used in dentistry to make metal restorations.
3. Describe the types of alloys used to make all-metal crowns, ceramometal crown, and partial denture frameworks.
4. Recall the types of porcelain used to simulate the color of teeth.
5. List the advantages and disadvantages of all-metal, ceramometal, and all-ceramic restorations.

CHAPTER 11: REMOVABLE PROSTHESES AND ACRYLIC RESINS

1. List the uses of acrylic resins in dentistry.
2. Explain the physical and chemical stages of polymerization of acrylic resins.
3. Describe the function of the components of heat-cure and cold-cure acrylic resin systems.
4. Describe the steps involved in construction of a denture.
5. Summarize the procedures used to reline a denture.
6. Explain a dental hygienist's role in maintenance of an acrylic prosthesis.

CHAPTER 13: SPECIALTY MATERIALS

1. Describe the components of a fixed orthodontic appliance.
2. Discuss the caries risk of orthodontic patients and the dental hygienists role in preventing caries and periodontal disease in these patients.
3. Summarize the procedures involved in root canal therapy.
4. Explain the use of periodontal packs and sutures.

CHAPTER 14: CLINICAL DETECTION AND MANAGEMENT OF DENTAL RESTORATIVE MATERIALS DURING SCALING AND POLISHING

1. Be able to differentiate between porcelain and composite material.
2. Discuss how the following criteria may help a clinician to distinguish between tooth tissues and restorative materials or between two types of restorative materials: Radiographic characteristics, surface smoothness, tactile and auditory sensations, location.
3. Distinguish between other tooth tissues and restorative materials by using the criteria listed in Table 14.1.
4. Describe some common procedures routinely performed by a dental hygienist that could be detrimental to teeth and restorative materials.
5. Verbally compare the expected differences in the surfaces of enamel and a gold crown after polishing with a relatively abrasive agent.
6. Recall the recommended instrumentation technique around the margins of cast restorations.
7. Explain the causes of possible damage to restorations from the use of high-speed instrumentation.

CHAPTER 16: POLISHING MATERIALS AND ABRASION

1. Briefly define the following terms: cutting, abrasion, finishing, polishing, and abrasive.
2. Recall six common abrasives that may be used for clinical or laboratory procedures.
3. Explain the difference between two-body and three-body abrasion. Provide an example of a polishing procedure that exemplifies each type of abrasion.
4. Summarize factors that may influence the rate of abrasion, and explain why the dental hygienist must have a clear understanding of these factors when providing patient care.
5. Discuss the reasons why tooth structure and restorations are polished.
6. Recall the details of the polishing process. Include the series of steps, scratches produced, and wavelength of visible light.
7. Describe the characteristics of an acceptable prophylaxis paste.
8. Describe the difference between a cleaning agent and a polishing agent.