DENTAL MATERIALS (DHYG 1219.5A1)

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

MODE OF INSTRUCTION
Face to Face

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:	Charisse Colbert, DDS Sam Giglio, DDS (Guest Speaker) Cynthia Thompson, BSDH, RDH
Email:	cthompson@lit.edu
Office Phone:	(409) 245-8459
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 & Mallonee, (2023) Wilkins' Clinical Practice of the Dental Hygienist. Jones & Bartlett Learning, 14th edition. ISBN: 9781284255997 (Hardcover)

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MONDAY LABORATORY SCHEDULE (1:00 – 4:00)

***Bring your textbook & Lab Manual with you to each lab.**

Date	Topic	Assignments (complete before lab)	Materials Needed for Lab
Week of Jan 19	**NO LAB - View the Safety in the Laboratory Powerpoint presentation and take the quiz prior to first day of lab. SIGN UP FOR SEALANT SCREENING – SEE GOOGLE DOC LINK IN LAB**	**Download Syllabus**	Due date for Quiz – Jan 23 @ 10:00 pm
Jan 26	Distribution of Storage Drawer Keys Pit & Fissure Sealants on Extracted Teeth Dr. Sam Giglio, DDS – Guest Speaker	Gladwin, 317-322 Wilkins, 647-658	Gloves, Safety glasses, Sealant Material Lab Notes Handout from Blackboard
Feb 2	Topical Anesthetics Sealants in the Clinic Dr. Sam Giglio, DDS – Guest Speaker	Wilkins, 687-690	Lab Notes Handout from Blackboard Gloves, Safety glasses, Sealant Material Sealant Skill Evaluation
Feb 9	Desensitization	Wilkins, 771-784 Gladwin, 391-398	Desensitization Skill Evaluation Gloves, Safety glasses, Sealant Material Sealant Skill Evaluation
	Sealants in the Clinic – Dr. Sam Giglio, DDS, Guest Speaker		
Feb 16	Periodontal Dressing	Wilkins, 763-768	Periodontal Dressing Skill Evaluation
	Denture Cleaning	Gladwin, 391-398	
Feb 23	Suture Removal Digital Camera (video) Dr. Sam Giglio, DDS – Guest Speaker	Gladwin, 187; 398-401 Wilkins, 758-762	Suture Removal Skill Evaluation
Mar 2	**NO LAB THIS WEEK - Lab Practical #1 Blackboard Testing**	**TEST OPEN MAR 5 @ 10:00am to MAR 6 @ 10:00pm**	
Mar 9	**NO LAB – SPRING BREAK**		
Mar 16	Dental Cements Clinical Topics:(BWX, Dental Charting, Informed Consent, Perio Bone Levels, etc.) Dr. Sam Giglio, DDS – Guest Speaker	Gladwin, 398-400	Lab Notes Handout from Blackboard

Mar 23	Instrument Sharpening	Wilkins, 719-729	Bring sterilized cassette, sharpening stone, plastic test stick
Mar 30	Mixing Alginate/Taking Lower Impressions Fabrication of Study Models Dr. Sam Giglio, DDS – Guest Speaker	Gladwin 337-344;345-366 Wilkins, 296-298	Gloves, Lab Coat, Glasses, Mask, Bowl, spatula, lab knife, Study Model Grade sheet
Apr 6	Mixing Alginate/Taking Upper Impressions Model Trimming-Trim lower model Dr. Sam Giglio, DDS – Guest Speaker	Gladwin, 349-356	Gloves, Lab Coat, Glasses, Mask, Bowl, spatula, lab knife Study Model Grade sheet
Apr 13	**Bleaching/Guest Speaker/Dentsply** **Both Monday and Wednesday labs will meet collectively on Monday, April 13th.**	You must be present for the presentation to receive the Dentsply whitening products. You will be tested over the information presented.	
Apr 20	Bleaching Tray Construction Trim Upper Model Dr. Sam Giglio, DDS – Guest Speaker	Gladwin, 371-383 Wilkins, 805-819	Gloves, Safety Glasses Bleaching Tray Grade Sheet
Apr 27	NO LAB THIS WEEK – LAB PRACTICAL #2 BLACKBOARD TESTING	**TEST OPEN APR 30 @ 10:00am to MAY 1 @ 10:00pm**	

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

b. 1 Final Exam

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:	
Tests and Final Exam 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).

ARTIFICIAL INTELLIGENCE STATEMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

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.**

SAFETY IN THE DENTAL MATERIALS LABORARY
*PRIOR TO FIRST DAY OF LAB

This presentation is required that you view the PowerPoint through the Dental Materials lab Blackboard platform. This presentation must be viewed, and the quiz taken and passed (75% or higher), prior to attending the first lab session. Any student who has not completed this requirement will not be permitted into the lab until complete.

This is a brief presentation over safety protocol during the Dental Materials lab sessions. Safety is important to protect you, the operator, from harmful events that could potentially occur. Please refer to the lab schedule regarding the type of safety equipment that will be needed for each day. It is imperative that the operator keep their work surfaces clean and clutter free to reduce the chances of cross contamination during the lab session.

Any drawers or cabinets issued to a student must be kept clean. Other classes use the lab and if drawers/cabinets are left unlocked this allows access to your property.

OBJECTIVES:

1. Identify the types of personal protective equipment (PPE) that must be used for the dental materials laboratory.
2. Recognize laboratory housekeeping practices that contribute to infection control and safety.
3. Identify and locate the proper safety equipment.
4. Identify the appropriate contacts for emergency situations if needed

LAB 1: PIT & FISSURE SEALANTS

As part of a complete preventive program, pit & fissure sealants are designated in 'the standard of care' for such a preventive program. Sealants are indicated for selected patients. Unlike fluorides, which protect the smooth surfaces of teeth, sealants protect the occlusal surfaces. Sealants have been shown to significantly reduce the incidence of occlusal decay on molars and premolars. The objective of this laboratory exercise is to present information about sealants and to instruct the student in the proper placement of pit & fissure sealants.

OBJECTIVES:

1. Define the term sealant. What are the criteria for an ideal sealant?
2. Discuss caries prevalence and the purpose of a sealant.
3. Describe the methods which sealants are classed. Compare and contrast the types of sealants.
4. Identify the indications, probable indications, and other considerations for a sealant.
5. Explain the contraindications for a sealant.
6. Explain the expected retention rate for sealants. List the factors which influence retention.
7. Briefly describe the basic technique used in sealant application. What differences occur among the various types of sealant materials?
8. What precautions must be taken when applying sealants?
9. Why is it important to isolate and dry the involved teeth? Identify any precautions that should be taken when drying the tooth surface.
10. What are the two purposes of an etchant? What is it composed of?
11. Describe the motion in applying an etchant.
12. Describe the appearance of an etched tooth. What is the next step if the tooth does not have a typical appearance?
13. After etching and rinsing, how long should the tooth be dried?
14. How much of the occlusal surface should a sealant cover?
15. When does initial polymerization and final polymerization take place?
16. When should a fluoride treatment be applied when placing pit & fissure sealants?
17. Discuss how sealants affect the incidence of dental decay.

Materials In Lab 1

In-Lab Sealants

In the lab, each student will apply sealants on extracted teeth

- **Gloves, face mask, and glasses/face shield**
- **Sealant kit**
- **Timer with second hand**
- Curing light
- Cotton pliers, explorer
- Articulating paper and floss

Materials for Sealant Placement on Student Partner

In-Clinic Sealants

In the Clinic, each student will apply sealant(s) on a live patient.

Safety Protocol: Gloves, glasses, mask and face shield
Clinic attire: Lab coat

- **Gloves, face mask, and glasses/face shield**
- **Sealant kit**
- **Timer with second hand**
- Curing light
- Cotton rolls, dry aids
- Saliva ejector and HVE tip
- Air/water syringe
- Cotton pliers, explorer
- Articulating paper and floss
- Fluoride gel and trays
- Toothbrush or slow speed handpiece & pumice

PROCEDURE (Light Cured Sealant with acid etch technique)

1. Assemble the materials necessary and explain to the patient what the procedure involves.
2. Ensure the tooth surface plaque-free. This can be achieved by brushing with a dry toothbrush, if prophy paste has not been used. Pumice slurry can be used only in the presence of stain or after prophy paste has been used on the tooth to remove the glycerin. Rinse the tooth well.
3. Isolate the teeth to be sealed and lightly dry the tooth to be sealed. Use cotton roll holders or any other means to assist in keeping the area dry.
4. Apply the etchant (phosphoric acid). Use a dabbing motion to apply liquid etchant to the teeth. Gel etchant is placed on the tooth surface to be sealed with no dabbing motion. The etchant should cover the occlusal surface to the marginal ridge or beyond the area to be sealed. Teeth should be etched for a minimum of **15 seconds** but no more than **60 seconds**.
5. Rinse the teeth while maintaining an isolated field. Rinse each tooth for **10-15 seconds for liquid etchant**. Rinse each tooth **30 seconds for gel etchant**. NO saliva should contaminate the etched tooth surface. Any contamination by saliva would require the operator to repeat the etching process and re-etch for 5 seconds.
6. **Dry** the teeth. The drying process should be **15 to 30 seconds** per etched tooth.
7. Evaluate the etched surface. Properly etched teeth should have a dull, chalky or satin appearance. If the etched teeth do not appear as they should, repeat steps 4 & 5.
8. Using the syringe tip, slowly introduce sealant into the pits and fissures. Do not let sealant flow beyond the etched surface. Stirring the sealant with the syringe tip during or after placement will help eliminate any possible bubbles, and enhance the flow into the pit and fissures. An explorer can also be used.
9. Remove excess sealant by wiping off excess with a cotton pellet or cotton roll before polymerization begins.
10. Apply the light source to begin polymerization. The light must be held approximately 3mm above the tooth surface. The light must not touch the tooth surface. Apply light as directed by the manufacturer of the sealant (approximately 20 seconds per sealant).
11. Rinse with water or wipe off excess from the surface of the sealant.
12. Evaluate the sealant using an explorer, floss, and articulating paper. Any inadequacies may dictate replacement

of the sealant. Check for the following characteristics:

a. Exploring confirms a smooth, hard surface
b. Absence of air bubbles
c. Sealant concentrated in central pits and fissures
d. Inclined planes are covered (1/3 to 2/3 of surface)
e. Occlusal relationship is maintained
f. Contacts are free of sealant material
g. Correct amount of sealant was used

13. Re-apply any sealant material that is necessary

***The Skill Evaluation for Sealants is found on the next page of this Lab Manual. Each student is required to bring to the clinic their own Person Protection Equipment (PPE), ClinPro Sealant Material, and the Sealant Skill Evaluation form. Clinic faculty will schedule each student to be an operator, and/or an assistant. Those students serving as patients must bring their clinic charts with them to have the sealants documented.**

LIT Dental Hygiene Program **Pit & Fissure Sealant Skill Evaluation**			
Dental Materials			
Competency Statement	PC.9b Recognize predisposing and etiologic risk factors that require intervention to prevent disease. PC.12. Provide specialized treatment that includes preventive and therapeutic services designed to achieve and maintain oral health.		
Student		Date:	
Instructor		Perio Case	I II III IV
Patient		Prophy Class	0 1 2 3 4 5 6 7 8
			□ Acceptable □ Not Acceptable

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
1	Utilize accepted infection control procedures	Yes		
2	Apply basic and advanced principles of dental hygiene instrumentation	No		
3	Maintain clinic and laboratory records as instructed	Yes		
4	Identifies information which may contraindicate treatment	Yes		
5	**Explains procedure and rationale to their patient – must do this with instructor present.**	No		
6	Utilizes correct technique in adequately etching the tooth surface	Yes		
7	Utilizes correct technique for curing the sealant	Yes		
8	Explores to examine surface for adequate sealant placement	No		
9	Utilizes articulating paper to evaluate and maintain proper occlusion	No		
10	Demonstrates that contacts are free of sealant material	No		
11	Demonstrates professional conduct and ethical judgment	Yes		
Comments:				

LAB 2: TOPICAL ANESTHETIC

Sensitivity of oral tissue is a concern for the dental hygienist. The dental hygienist may choose to use a topical anesthetic to temporarily relieve patient discomfort. The goal of the lab exercise is to provide instruction in the application of topical anesthetic on oral soft tissue.

The information and skills presented are for your information and not intended to be taught to clinical competency.

OBJECTIVES:

1. What is a topical anesthetic?
2. Identify the indications for use of a topical anesthetic.
3. List the requirements for an adequate topical anesthetic.
4. What are the general properties and characteristics of anesthetics for surface use?
5. What are the most common drugs contained in topical anesthetics?
6. Identify and explain the adverse reactions to a topical anesthetic.
7. Identify any precautions and preventive measures that should be utilized with topical anesthetic.
8. Explain the technique when applying a topical anesthetic.
9. Apply a topical anesthetic on a typodont according to the instructions given in lab

MATERIALS:

- Glasses, gloves, & mask
- Topical anesthetic
- Gauze
- Cotton swab & rolls

PROCEDURE:

1. Identify an area of gingival tissue that has undergone or needs to go through deep instrumentation resulting in tissue manipulation.
2. Consult the medical/dental history to identify any allergies which may contraindicate the use of a topical anesthetic.
3. Assemble the appropriate materials which include topical anesthetic, cotton swab or cotton pellets. Depends on topical anesthetic that is being used.
4. Dry the area which is targeted for anesthetic.
5. Apply with an applicator to the area.
6. Wait briefly for the anesthetic to take effect.

LAB 3: DESENSITIZATION

Hypersensitivity of the hard tissues, i.e. tooth surfaces, in the oral cavity can be of considerable discomfort to the patient. When the hard tissue is affected, the hygienist may choose to use any number of chemical and/or mechanical means to alleviate pain sensations. In the case of hard tissue hypersensitivity, a chemical desensitizing agent, such as fluoride preparations may be applied. New materials such as Vanish, GI Paste, NuPro Paste, and Proclude are additional alternatives for desensitization of root surfaces, however, these are costly to purchase. The purpose of this laboratory session is to direct the student in applying desensitizing agents.

Safety Protocol: Gloves, glasses, mask, lab coat

OBJECTIVES:

1. What is dentinal hypersensitivity?
2. What causes dentin hypersensitivity?
3. Explain how natural desensitization occurs.
4. List the types of pain stimuli which can illicit pain in a hypersensitive area?
5. Explain the theories of pain impulse conduction.
6. Define the following terms: dentin hypersensitivity, hydrodynamic theory, iontophoresis, reparative/secondary dentin, smear layer.
7. Explain how to conduct a differential diagnosis for dentin hypersensitivity pain.
8. What are the characteristics of an acceptable desensitizing agent?
9. What may a patient do to reduce dentinal hypersensitivity?
10. What can a dental professional do to reduce dentinal hypersensitivity?
11. Explain the procedure for applying sodium fluoride desensitizing paste.
12. Perform desensitization with a Porte Polisher and sodium fluoride on a typodont.

MATERIALS:

- Glasses, gloves, mask
- Porte Polisher
- Gauze
- Bendabrush
- Cotton swab
- Cotton rolls

PROCEDURE

Desensitizing agent, hard tissue

1. Identify a sensitive area of exposed root surface that is accessible.
2. Scale and root plane for removal of deposits and altered cementum. The agent for desensitization must be applied directly onto the tooth surface.
3. Assemble the appropriate materials which include a Porte Polisher, wood points, cotton swab or pellet.

Sodium Fluoride Varnish:

4. Identify the sensitive tooth.
5. Apply the agent by wiping the exposed area with an applicator.

Desensitizing Fluoride Paste:

6. Apply a small amount of desensitizing agent into a dappen dish.
7. Using a modified pen grasp, apply the agent to the teeth with a porte polisher or rubber cup. Establish a fulcrum as close as possible to the tooth being treated.
8. Use small circular or linear strokes appropriate for the area or a rolling motion with the rubber cup.
9. Apply firm, moderate pressure, increasing pressure away from the gingiva and decreasing pressure close to the gingiva. Be sure to cover the cervical area.

Evaluation:

10. Wipe off excess agent and request patient to rinse with warm water. If patient elicits pain response repeats at future appointment.
11. Do not use compressed air on tooth, and demonstrate concern for patient comfort.

LIT Dental Hygiene Program **Desensitization of Hard Tissue Skill Evaluation**			
Dental Materials Lab			
Competency Statement	PC.10.b. Identify patient needs and significant findings that impact the delivery of dental hygiene services. PC.12.b. Control pain and anxiety during treatment through the use of accepted clinical and behavioral techniques. PC.13. Evaluate the effectiveness of the implemented clinical, preventive, and educational services and modify as needed.		
Student		Date:	
Instructor		Perio Case	I II III IV
Patient		Prophy Class	0 1 2 3 4 5 6 7 8
		Grade	☐ Acceptable ☐ Not Acceptable

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
1	Utilize accepted infection control procedures (gloves, glasses, mask)	Yes		
2	Apply basic and advanced principles of dental hygiene instrumentation	No	N/A	
3	Maintain clinic and laboratory records as instructed	Yes	N/A	
4	Application of professional knowledge, judgment and skills by the student while providing patient care	Yes		
5	Demonstrate the ability to communicate professional knowledge verbally and in writing	No		
6	Medical/dental history is consulted to identify any allergic reactions which may contraindicate use	Yes		

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
7	Assemble the proper equipment to include: • Cotton rolls, swabs, pellets • Bendabrush • Porte polisher & wood point • Desensitizing agent	No		
8	Identifies area of exposed root surface and gingival recession and sensitivity.	Yes		
9	Isolate and dry the area.	Yes		
Procedure (Sodium Fluoride varnish)				
10	Apply to tooth with Bendabrush.	No		
11	No drying required. Inform patient to eat soft foods and not to drink hot beverages after application.	Yes		
12	Instruct patient not to perform home care regimen for 4-6 hours after application.	Yes		
Procedure (**Sodium Fluoride paste)**				
13	A small amount of desensitizing paste is placed on the area with a cotton tip or rubber cup.	No		
14	A modified pen grasp is used while small, circular or linear stokes are used to apply the desensitizing agent.	No		
15	Firm, moderate pressure is used with increasing pressure away from the gingiva and decreasing pressure close to the gingiva.	Yes		
16	Wipe off agent and rinse teeth with warm water.	No		
Evaluation				
17	Demonstrate on the typodont how to determine whether the hard tissue demonstrates a degree of desensitization. If patient elicits a pain response; repeat at future appointment.	Yes		
18	Shows concern for patient comfort (does not use compressed air on the tooth).	Yes		
Comments:				

LAB 4: PERIODONTAL DRESSING

The objective of this lesson is to present various forms of periodontal dressing and to provide an opportunity to mix the material to the consistency that will be pliable, yet firm enough to adhere to the surgical site. You will also be instructed in how to apply the periodontal dressing once mixed.

This material is used to provide protection to underlying tissue after a surgical procedure. The components in the material contain ingredients that aid in the healing of gingival tissues. The protection of the material 'bandage' contributes to the reduction of postoperative pain, infection and hemorrhages. The surgical sites are superficially protected from surface trauma during mastication of food. The plaque and food debris does not form on the surgical site, but only on the surface of the pack. There is also extra support for mobile teeth during the healing process, as the periodontal dressing becomes quite hard when fully set.

Although there is a powder-liquid technique, it is not used as much because of the inconvenience in mixing. Proportions dispensed are not critical for the powder-liquid technique. This material allows you to incorporate as much powder into the liquid as needed to acquire a homogenous, very heavy, putty-like mass of material. You would use paper pads and tongue blades to mix the material until it becomes too stiff to manipulate with the tongue blade. A thin coat of petroleum jelly on your hands would then be used, rolling the mixture into the powder until it becomes as firm as you desire.

Since the paste systems provide both regular set and a fast-hard set, the material is easier, cleaner, and faster to manipulate and is therefore, more popular. This is what we will use in lab.

The information and skills presented are for your information and not intended to be taught to clinical competency.

OBJECTIVES:

1. List five purposes and uses of a periodontal dressing.
2. What are the seven characteristics of an acceptable periodontal dressing?
3. Identify the two basic types of dressings (as described by Wilkins), the ingredients in both and the purpose of each ingredient.
4. Compare and contrast the properties of a periodontal dressing that does contain eugenol to a pack that does not contain eugenol.
5. Explain how each type of periodontal dressing is mixed and applied. Which one may be mixed and refrigerated for later use?
6. Identify six characteristics of a well-placed periodontal dressing.
7. Explain when and how a periodontal dressing should be removed.
8. Apply a periodontal dressing on a typodont according to instructions given in class.

MATERIALS (PASTE-TYPE)

- **Gloves, glasses, mask**
- Package of 2 paste periopack (COE-Pak)
- Rigid metal spatula or tongue blade
- Small paper cup
- Treated paper pad
- Antiseptic

- Orange solvent
- Petroleum jelly (optional)
- 2 x 2 inch gauze sponge

PROCEDURE

1. Place the paper pad on a paper towel.
2. Place a few drops of antiseptic soap in the small paper cup. Fill the cup of 2/3 full of room temperature tap water; keep it near your working area.
3. Dispense equal portions of the base and catalyst onto the paper pad. The length of the material you dispense depends upon the size of the surgical site.
4. If you desire to use a retarder to give you additional working time, now is the time to dispense a few drops (according to the manufacturer's instructions) onto the base material.
5. Mix the catalyst and base together. Mixing time is 30-45 seconds. Initially, the pastes should be stirred together then lay the tongue blade down on its side and mix it thoroughly. There should be a homogenous mix with no color streaks or lumps. Mixing with a tongue blade means you will have less to clean up later, but it is not an easy way to mix the material. The edges are not sharp enough to pick the material up easily, and the tongue blade will break with too much pressure.
6. Test the uniformity by spreading the material over the entire paper pad. Look carefully for any streaks. If there are any streaks, continue mixing and repeat Step 7 until it is thoroughly mixed.
7. Pick up the material on the wooden tongue blade after it is mixed, and place the entire mass into the cup of water mixed with antiseptic soap.
8. Allow the material to set in the soapy water for about 3 to 5 minutes until it no longer sticks to your fingers.
9. Remove the material from the water with the tongue blade when you can handle the material without it sticking to your fingers,
10. Remove the material from the tongue blade, scraping it with your fingers.
11. When the material is free of the tongue blade, roll the material into a rope shape between your fingers.
12. Once the material is in a rope shape, it can be placed on the typodont which is simulating a surgical site.
13. Discard the tip piece of paper pad. Fold it in half to prevent it from sticking to anything it could damage. Discard the used tongue blade and the cup of soapy water.

PLACEMENT AND REMOVAL OF PERIODONTAL DRESSINGS

Dressings must be placed in keeping with biologic principles, which will contribute to healing and yet be tolerated by the patient. A satisfactory dressing is rigid and secure. A movable dressing is an irritant and can promote hemorrhage. A satisfactory dressing also has little bulk yet enough so that it remains strong. The well-placed dressing is also locked interdentally and covers the surgical wound including the interdental area. These factors prevent the dressing from being dislodged and discourage food retention at the site of the injury. The objective of this laboratory lesson is to demonstrate the proper placement of a periodontal dressing.

MATERIALS

- Typodont
- Periodontal dressing (COE-Pak)
- Cotton pliers
- Curet, large scaler, hoe and/or plastic instrument
- Gloves, glasses, mask

PROCEDURE

1. Roll the mixed dressing into a round strip.
2. Examine the area to be sure bleeding has stopped. Aspirates blood and saliva. Dry the area with gauze.
3. Places material over length of surgical site. Press dressing to the site with fingers, adapting to the contours of the teeth and tissue.

Quadrant applications: Apply a continuous single strip from the lingual to facial or two strips may be used to cover a quadrant. If using two strips the first should extend from the distal of the most posterior tooth over the facial surfaces and the second strip should overlap the first on the distal and extend along the lingual.

4. Moisten your fingers with water or dip them in dressing powder to prevent sticking during application.

5. Press at the interproximal areas to gain retention and provide complete coverage for the treatment area. Adapt with a plastic instrument or cotton pliers.

6. Edentulous areas can usually be filled to make the dressing continuous between the teeth unless too great a gap exists.

7. Checks the dressing for over-extension by muscle trimming. Muscle trim the cheeks, lips, and tongue to prevent movement or dislodging of the dressing.

8. Check frenum for freedom of movement.
   A. Lingual. Request the patient to touch the palate with the tip of the tongue
   B. Buccal. Retract the cheek up and out over maxillary premolars and out from mandibular premolars
   C. Anterior. Retract upper lip up and out over maxillary central incisors and retract lower lip out and up for mandibular midline frenum.
   D. Adjust dressing by rolling and folding back the border, unless there is gross excess, which should be removed.
9. Check the occlusion. The dressing should extend only to the height of the contour of the teeth and should not be in occlusal contact during closure. Have the patient close to check possible interference with occlusion
10. Protect papillae and areas of recession. Use small sections of dressing to mold into wedge shapes to press interproximally from facial to lingual. It is very important that the proximal gingiva be completely and firmly covered. A strip of dressing can then be added facially and lingually for complete coverage.
11. Shape. Festoon the dressing around each tooth by using a curet. Remove any excess dressing.
12. Evaluate the dressing. The dressing must meet the following criteria:
    a. Secure and rigid
    b. Has little bulk
    c. Fills the interdental area to cover wound and prevent food retention
    d. Muscle action will not displace the dressing
    e. Covers all of the surgical wound without unnecessary overextension (does not extend beyond the height of contour or into the vestibule)
13. To remove, insert a large scaler, hoe, or plastic instrument under the border of the dressing and apply lateral pressure.
14. Watch for sutures that may be caught in the dressing.
15. Remove pieces of dressing gently with cotton pliers.
16. Observe tissue condition and record appearance.
17. Use a scaler for removal of pieces attached to the tooth surfaces and use a curet for particles near the gingival margin.
18. Rinse with a syringe with a gentle stream of warm water, and provide warm diluted mouth-rinse for the patient's comfort.
19. Instructs patient to avoid brushing the area, to rinse with warm salt water and to avoid eating coarse foods

LIT Dental Hygiene Program **Placement and Removal Of Periodontal Dressing Skill Evaluation**			
Dental Materials			
Competency Statement	PC.12. Provide specialized treatment that includes preventive and therapeutic services designed to achieve and maintain oral health.		
Student		Date:	
Instructor		Perio Case	I II III IV
Patient	Typodont	Prophy Class	0 1 2 3 4 5 6 7 8
		Competency	☐ Acceptable ☐ Not Acceptable

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
1	Utilize accepted infection control procedures	Yes		
2	Apply basic and advanced principles of dental hygiene instrumentation	No	N/A	
3	Maintain clinic and laboratory records as instructed	Yes	N/A	
4	Application of professional knowledge, judgment and skills by the student while providing patient care	Yes		
5	Demonstrate the ability to communicate professional knowledge verbally and in writing	No		
6	Evaluate quadrant for placement of a periodontal dressing.	No		
7	Apply a strip of periodontal dressing over a quadrant and secure.	No		
8	Shape the dressing as needed.	Yes		
9	Evaluate the placement of the dressing.	Yes		
10	Remove the periodontal dressing.	No		
11	Rinse.	No		
12	Instructs the patient regarding home care.	No		
Comments:				

LAB 4: DENTURE CLEANING

Thousands of individuals must wear dentures to restore oral aesthetics and function. Some denture wearers often neglect to follow a daily home care regimen. The purpose of this laboratory exercise is to explore the need, materials, current home care recommendations, and professional cleaning of dentures. You will also learn how dentures are cleaned in the clinical setting.

The information and skills presented are for your information and not intended to be taught to clinical competency.

OBJECTIVES

1. Identify the components of a denture.
2. Understand how to care for a denture during intraoral procedures.
3. Identify the common denture cleaning materials.
4. Identify household products commonly used as denture cleaning products and explain the potential effects of such products.
5. Describe the significance of daily denture cleaning.
6. Demonstrate the professional cleaning of dentures.
7. Describe the recommended daily cleaning regimen for dentures and partial dentures.

MATERIALS

- Denture
- Sterilization tubing, sealer
- Denture cleaning tablet or solution
- Denture brush
- Ultrasonic bath

PROCEDURE

1. Assemble all necessary equipment.
2. Cut bag large enough to comfortably hold denture and cleaning agent.
3. Place warm water in bag and drop in cleaning tablet or tartar stain remover.
4. Place denture into bag and seal.
5. Let denture soak in solution at least 15 minutes or place in ultrasonic bath for 10 minutes.
6. Rinse and scrub with denture brush.

LAB 5: SUTURE REMOVAL

You have learned from your studies that a suture is a strand of fiber used to unite parts of the body. There are two main purposes. The first is to maintain the sutured tissues until healing and the second is to hold and stabilize replaced and readapted tissue. The professional has several different types of sutures that can be utilized, depending upon patient need. One fact remains certain concerning sutures. That is, if they are made of a type of material which cannot be absorbed by the proteolytic enzymes of the body they must be removed by a clinician. The objective, therefore, of this laboratory lesson is to demonstrate the procedure used to remove intraoral sutures.

OBJECTIVES

1. Identify six purposes of a suture.
2. List three materials that are used in making absorbable suturing material.
3. List four materials which are used in making nonabsorbable sutures. Which is most commonly used in oral surgery?
4. List the two characteristics or ways to classify suturing material.
5. What are the three characteristics of a suturing needle?
6. Identify and discuss the different types of suturing techniques.
7. Observe the suture removal procedure and list the procedural steps.
8. Identify two precautions that pertain directly to suture removal.

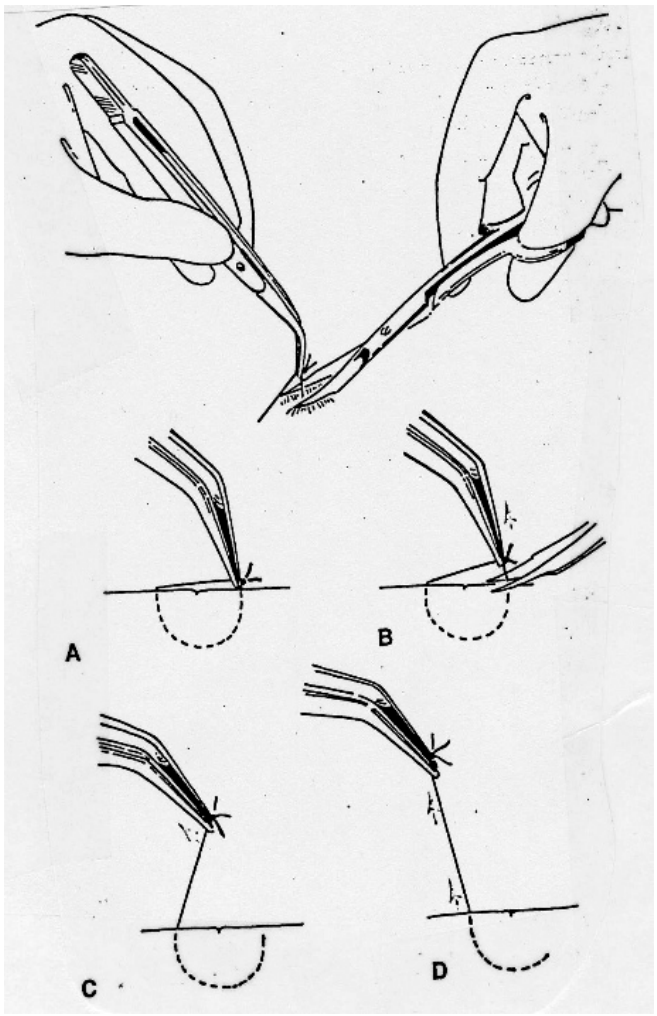
MATERIALS

- **Glasses, mask/face shield**
- Cotton pliers
- Topical anesthetic
- Cotton pellets
- Curved sharp scissors
- Mouth mirror
- Topical antiseptic
- Gauze

PROCEDURE

1. Prepare the patient. Debride the area by using a cotton tipped applicator or cotton pellet dipped in 3% hydrogen peroxide.
2. Retract and pat the area with a gauze sponge to remove surface moisture.
3. Apply topical antiseptic with swab.
4. Apply a topical anesthetic if necessary.
5. Grasp the suture knot with the cotton pliers and draw it gently up about 2 mm and hold with a slight tension.
6. Insert tip of the sharp scissors under the suture, slightly depress the tissue with the back of the scissor blade, and cut the suture in the part that was previously buried in the tissue. (See Diagram B below).
7. Hold the knot end up with the cotton plier and pull gently to allow suture to come out through the side opposite where it was cut. This prevents any part of the external segment of the suture from passing through the tissue and introducing infectious material. (See Diagram C & D below).
8. Withdraw gently and steadily.
9. Place each suture on a sponge for final counting and proceed to the next suture.
10. Count total sutures and confirm the number with the patient's record.
11. Apply gauze sponge on bleeding spots.

12. Re-evaluate. Ask the patient to close on the sponge while dressing is prepared (if applicable).



LIT Dental Hygiene Program **Suture Removal Skill Evaluation**			
Dental Materials Lab			
Competency Statement	PC.12. Provide specialized treatment that includes preventive and therapeutic services designed to achieve and maintain oral health. PC.12.b.Control pain and anxiety during treatment through the use of accepted clinical and behavioral techniques.		
Student		Date:	
Instructor		Perio Case	I II III IV
Patient		Prophy Class	0 1 2 3 4 5 6 7 8
		Competency	☐ Acceptable ☐ Not Acceptable

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
1	Utilize accepted infection control procedures (gloves, glasses, & mask)	Yes		
2	Maintain clinic and laboratory records as instructed	Yes	N/A	
3	Application of professional knowledge, judgment and skills by the student while providing patient care	Yes		
4	Demonstrate the ability to communicate professional knowledge verbally and in writing	No		
5	Assemble the proper equipment to include: • Mouth mirror & cotton pliers • Cotton swab & pellet • Scissors • Gauze • Topical anesthetic & antiseptic	No		
6	Observe healing tissue surrounding sutures.	Yes		
7	Clean the area with topical antiseptic (3% hydrogen peroxide) on a cotton swab or cotton pellet. Dry.	Yes		
8	Swab with topical anesthetic if necessary.	No		
9	Draw the knot up gently with cotton pliers.	No		
10	Insert the tip of the scissor under the suture. Press slightly with the scissors to depress the tissue and cut the suture.	Yes		
11	Hold the knot end-up with cotton pliers.	No		
12	Withdraw gently and steadily. Place each suture on a sponge for counting. Confirm the number of sutures with the patient's record.	Yes		
13	Apply gauze sponge with slight pressure to control bleeding.	No		

Comments:

LAB 5: INTRAORAL CAMERA

You will receive additional handouts in class for this lab.

OBJECTIVES

1. List the ways dental photography can enhance a practice.
2. Explain the difference between extra and intraoral cameras.
3. photography.
4. Be familiar with the parameters in obtaining good images.
5. Understand the step by step technique on exposing photographs.
6. Discuss and explain the five basic shots of extraoral photographs.
7. Understand how various specialties as well as general dentistry can utilize

LAB 6: DENTAL CEMENTS

Dental cements are used often in the dental practice setting. Often times, the dental hygienist may asisst the dentist by mixing the cement to seat a crown or other restoration either permanently or temporarily. The purpose of this lab is to discuss the use, composition, and physical as well as chemical properties of each material.

OBJECTIVES

1. Describe the use or purpose of the following materials:
    - Calcium hydroxide
    - Zinc phosphate
    - Glass ionomer
    - Zinc-oxide eugenol (ZOE)
    - Temporary cement
2. Demonstrate the proper mixing technique for the provided materials.
3. Recall the approximate mixing and setting times for liners, bases, and cements discussed.
4. Clean the cement spatula or mixing instrument and slab with the appropriate cleaning agent before the material sets.

Mix the dental cements below:

MIXING DENTAL CEMENTS

Work through each product below. Follow the instructions for each. All products should be recapped immediately after dispensing. Do not leave caps off of products.

Work in groups and have your partner time you when mixing begins.

CALCIUM HYDROXIDE PASTE

This exercise is to practice mixing calcium hydroxide paste as a base or liner material.

1. Dispense equal small amounts of Base and Catalyst onto pad.
2. Mix together to form a homogeneous mix.
3. Mixing time should not exceed 10 seconds.
4. Clean spatula immediately.
5. Setting time should be approximately 2-3 minutes on the pad.

ZINC OXIDE EUGENOL

This exercise is to practice mixing the ZOE to a temporary restoration consistency. The end product should be a putty consistency and be able to be rolled into a small ball. This would allow the DDS to place a temporary restoration in a patient's prepared tooth. Fluff the powder prior to opening

1. Place 1 level scoop of zinc oxide powder onto slab.
2. Divide powder in half.
3. Dispense 1 drop of eugenol liquid onto slab.
4. Incorporate ½ the powder into liquid. Use a 'smashing' stroke to wet all the powder.

5. Incorporate more powder until desired consistency is reached.
6. Mixing should be complete in 1.5 minutes.
6. Roll the mixture into a ball.
7. Clean slab and spatula.

TEMPORARY CEMENT

This exercise is to practice mixing the Temp-Bond (temporary cement) for cementing temporary crowns and other temporary restorations.

1. Dispense equal lengths (approximately ¼ inch) of Base and Accelerator onto coated mixing pad.
2. Mix the pastes together for approximately 30 seconds.
3. Mixture should be a relatively fluid consistency to coat inside of a restoration for cementation.
4. Clean spatula immediately.

GLASS IONOMER CEMENT

This exercise is to practice mixing the Ketac Cem (glass ionomer cement) for cementing permanent restorations. Fluff the powder prior to opening. Do not pack the powder into the scoop. Level the top of the powder prior to dispensing.

1. Dispense 1 level scoop of powder onto coated mixing pad.
2. Dispense 2 drops of liquid onto mixing pad.
3. Incorporate all the powder to liquid at one time.
4. Mixing thoroughly for 15-30 seconds.
5. Mixture should be a consistency to where the mixture stretches 0.5 inch between spatula and pad.
6. Watch for the change of glossy appearance as the mixture sets. How long does the change in appearance take?
7. Clean the spatula immediately with soap and water before cement sets.

LAB 7: INSTRUMENT SHARPENING

Instrument sharpening and detecting when an instrument is dull are both important skills that hygienists need to be able to recognize. In this unit, the student will learn, practice, and demonstrate proper sharpening techniques with the sharpening stone and with the Periostar.

You will receive additional handouts in class for this lab.

OBJECTIVES:

1. List the benefits achieved when utilizing scalers and curettes with sharp cutting edges.
2. Distinguish a "dull" cutting edge from a "sharp" edge.
3. Describe how the traditional "degrees of angulation" correspond with the clock positions in this strategy.
4. Identify the essential grasp of both the instrument and the sharpening stone as defined in this technique.
5. Describe the sharpening procedure for Sickle Scalers, Universal Curettes, and Gracey curettes as outlined in this technique.
6. Define the procedure for determining when a "sharpened" cutting edge is sharp.

MATERIALS:

- **Glasses/face shield, mask**
- Instrument Sharpening skill evaluation
- One Sterilized instrument cassette
- Sharpening stone
- Plastic test stick

Instrument Sharpening Skill Evaluation

Student Instructions

1. Bring 1 sterilized cassette to lab
2. Review the following prior to the skill evaluation:

General Principles:

- Works in a well-lighted area.
- Holds instrument in stable position.
- Sits with both feet flat on the floor.
- Uses the light and magnifying glass (if necessary) to examine the cutting edge.

Grasp:

- Holds instrument with the appropriate grasp for the technique.
- Grasps stone with thumb (directed towards the student) contacting one side and three fingers positioned in a line on top of each other on the other side.

Positioning of Instrument:

- Positions face of instrument blade horizontal (parallel) to the floor.
- Places stone surface and face of the blade at a 90^{o} angle to each other. (12 o'clock position, stone).
- Tilts top of stone out to achieve a clock position of 11:30 or 12:30 in relationship to the blade face depending on the cutting edge to be sharpened.

- Applies light-medium pressure on down stroke using one stroke per second
- Up stroke consists of very light contact to instrument edge without removing stone form blade in order to maintain a proper angulation.
- Demonstrates techniques to round the toe of a curet (stone at 2:00) and round the back of a curet.

Evaluation:

- Sharpened blade removes material from testing sticks with light pressure on stroke.
- Sharpened cutting edge does not reflect light when examined with magnifying glass and/or light source.
- Original form of the instrument is preserved

Instructor Instructions

1. Determine that the instruments are at least slightly dull.
2. Observe the student's sharpening technique on one anterior sickle scaler, a
3. universal curet and either the Gracey 13/14, 15/16 or the 17/18.
4. Evaluate the instrument to determine if the cutting edge is sharpened and if the
5. original shape of the instrument was maintained.
6. Record any feedback on the evaluation form.

LIT Dental Hygiene Program **Skill Evaluation** **Instrument Sharpening**			
LIT Competency Statements	PC2. Assume responsibility for dental hygiene actions and care based on accepted scientific theories and research as well as the accepted standard of care. PC6. Evaluate and utilize methods to ensure the health and safety of the patient and the dental hygienist in the delivery of dental hygiene.		
Student		Date	
Instructor		Periodontal Stage	N/A
Patient		Prophy Class	N/A
All three must be completed	Anterior Sickle Scaler Universal Curet (SYG 7/8 or SC 13/14) Gracey Curet (choose one)	Grade	Acceptable Not Acceptable

The student, in accordance with the standards set forth by the ADA and the Dental Hygiene Program, has demonstrated the following criteria.		Critical Error	Yes	No
1	Utilize accepted infection control procedures	Yes		
2	Maintain clinic and laboratory records as instructed	Yes		
3	Appropriate application of professional knowledge, judgment and skills by the student while providing patient care	Yes		
4	Demonstrate the ability to communicate professional knowledge verbally	No		
5	Use an accepted sharpening procedure	Yes		
6	Maintain the original design of the instrument	Yes		
7	Produce a sharp edge as determined by test stick and/or visual glare test	Yes		

Comments:

LAB 8 & 9: MIXING ALGINATE & TAKING IMPRESSIONS

IMPRESSION MATERIALS (ALGINATE)

The function of an impression material is to accurately record the dimensions of oral tissues and their spatial relationships. In making an impression, a material in the plastic state is placed against the oral tissues to set. After setting, the impression is removed from the mouth and is used to make a replica of the oral tissues. The impression material in this lesson is called alginate. It is one of the most widely used dental impression materials and is used extensively to prepare study models of either the entire dental arch or a segment of it.

Safety Protocol: Gloves, glasses, mask, lab coat

MATERIALS

- **Gloves, glasses/face shield, mask**
- Impression trays
- Mixing bowls
- Spatula
- Utility wax
- Alginate
- Graduated cylinder

OBJECTIVES

1. Explain how to mix alginate impression material.
2. How do you select the correct size impression tray?
3. Describe how you try in a tray in maxillary and mandibular arches to check for size.
4. What is the purpose of beading utility wax on an impression tray?
5. How are strength and quality affected by the water/powder ratio, spatulation, and optimum time in position?
6. When should an impression be poured?
7. Explain how you prepare a tray, patient and dental arch for insertion of an impression tray.
8. How do you fill an impression tray?
9. Explain how you insert a maxillary and mandibular impression tray.
10. What do you do to prepare an impression to pour it with plaster?
11. What is “muscle molding” or “muscle trimming”?

PROCEDURE

1. Assemble the appropriate materials and equipment.
2. Explain the procedure to the patient.
3. Position the patient.
4. Examine the oral cavity for any factors which may influence the impression tray selection.
5. Clean the patient's mouth of debris and have them rinse with mouthwash.
6. Select the proper size and shape of impression trays
7. Apply rim of utility wax for patient comfort.
8. Mix the impression material.
9. Technique:

a. Place room temperature, measured water in mixing bowl.
b. Add measured powder.
c. Quickly incorporate the powder and water using a figure eight motion. A creamy, thick mix is obtained.

10. Fill the impression trays and smooth with a wet finger.
11. Insert the mandibular tray. Seat the posterior portion first and then the anterior portion. Apply equal bilateral pressure. Instruct the patient to lift their tongue up to allow material to flow into the lingual vestibule. Muscle trim by having patient make an "O" with their mouth.
12. Allow alginate material to set and remove with a quick snap. Do not "tease/wiggle/rock" the impression out.
13. Store the impression in a wet paper towel.
14. Insert the maxillary tray. Seat the tray from posterior to anterior. Apply bilateral pressure in the area of the premolars. Muscle trim.
15. Remove, rinse and store while preparing plaster.

LAB 8 & 9: STUDY MODELS/GYPSUM PRODUCTS

OBJECTIVES

1. Mix a gypsum product and pour an impression.
2. List the six types of failure in an impression and what the cause may be.
3. Explain how plaster or stone is mixed.
4. How do you pour an impression or mold?
5. What ratios of water & powder are used when mixing plaster or stone?
6. How can the initial set of gypsum products be determined?
7. How can you eliminate voids in a model?

MIXING GYPSUM PRODUCTS

As you have discovered in your study of gypsum material, both stone and plaster are rigid materials. Plaster can be used as an impression material as long as there are no undercuts where the impression is taken. Because of the limited situations in which this is possible, plaster and stone are usually used for models, casts and dies. One of the most common factors which affects gypsum materials is the water temperature with which it is mixed and any additives which are added. The quality of the finished cast also depends on your ability to mix the plaster or stone properly. The success of this project will depend upon the following:

- Mixing the plaster properly
- Pouring the plaster properly
- Controlling or minimizing air bubbles in the mix

You can control the air bubbles in the mix by either vacuum mixing, which can eliminate the problem altogether, or by using a vibrator. Vibration, used properly, reduces the air in the mixture; but if you over-vibrate, more air to be incorporated into the mixture. In this laboratory experiment, you are allowed to use a vibrator during the mixing of the materials. The finished product will depend on how well you mix the gypsum, the time it takes you to complete the mix and how you pour the material after vibrating it. Listed here are errors that can occur and some of the consequences.

ERRORS	CONSEQUENCES
Incorporating air during mixing	Excess bubbles in model
Mixing too long	Mix gets too thick, Sets too fast, Produces poor detail
Wrong proportions of Powder to water:	
Too much water	Runny, thin, weak mix that takes too long to set
Too much powder	Lumpy, thick, weak mix that sets too fast
No separating medium	One mass
Improper vibration technique:	
Too much vibration	Excess air bubbles entrapped
Too little vibration	Excess air bubbles entrapped
Waiting more than 3 hours	Difficult to separate impression cast (usually breaks)
Separating impression and cast too fast	Both parts break into pieces

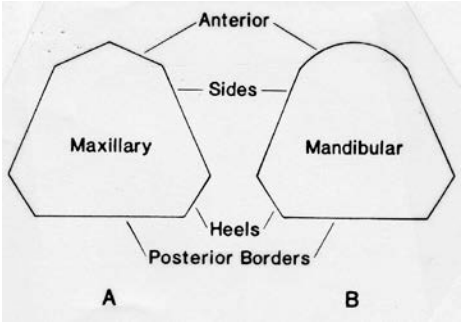
LAB 9 and 10: STUDY MODELS/MODEL TRIMMING

Study models, or diagnostic casts, are exact plaster or stone replicas of the patient's mouth. The models are constructed from impressions taken of the patient's mouth which are then filled with plaster material. When the impression and plaster are separated, the resulting model is referred to as the study model. Before the models can be used, they must be trimmed and finished. The finished study models can be used as permanent records, diagnostic aids, educational aids, and for the fabrication of temporary appliances.

There are several characteristics of an acceptable set of study models. The list below identifies the criteria for an acceptable set of study models.

The information and skills presented are for your information and not intended to be taught to clinical competency.

OVERALL BASE SHAPE



OBJECTIVES

1. Pour an impression which will accurately reproduce the existing oral structures.
2. Explain the technique in pouring an impression.
3. Identify any precautions to be taken when pouring an impression.
4. Identify the characteristics of an acceptable study model.
5. List the sequence in trimming a study model.
6. Identify the shape of an accurate study model and how each plane is determined.

MATERIALS

- Impression
- Vibrator
- Plaster
- Mixing bowl
- Tile
- Scale
- Spatula
- Plastic knife

PROCEDURE FOR POURING

1. Shake any water out of the impression. If necessary, blot any excess moisture.
2. Hold the impression by the handle and press handle against vibrator.
3. Drop a small amount of plaster at one posterior corner and allow the mix to flow through the impression. Add additional increments of plaster until the impression is full.
4. Remove from vibrator and add enough plaster so it stands ¼" above impression.
5. Place remaining plaster on a tile square. Smooth with the spatula to form a small flat pancake.
6. Invert the impression and place on the plaster base. The handle should be parallel to the counter top.
7. Add plaster on periphery and heel areas to provide a smooth surface. Remove excess so that wax periphery is visible.
8. Separate one hour after pouring.

CAUTION: Do not set a newly poured impression near an operating vibrator. The vibrations from the machine will vibrate the counter top and, in turn, your impression. It will then flow out of the impression.

PROCEDURE FOR TRIMMING

Refer to your Gladwin textbook on pp. 350 – 356 for trimming instructions.

Study Model Grade Sheet	
Name	Grade
Date	

Model Information: Check all the information that describes the models submitted.			
	Maxillary	Mandibular	Trimmed
Typodont			

Important note: You must submit this grade sheet with your study model. Have the impression checked and graded prior to pouring the model.
Maximum grade is equivalent to 100%. Add the total points earned, divide by 30, and then multiply by 100.

TAKING AN ALGINATE IMPRESSION:	
Voids and Tears	
5	Free of voids and tears
4	1 area of void or 1 tear
3	2 areas of voids or tears
2	3-4 areas of void or tears
1	5 or more areas of voids or tears
Technique in taking impression	
5	Adequate impression material covers all structures
4	Adequate impression material, 1 error in technique (not fully seated, tray seated incorrectly, removed before setting, etc.)
3	Inadequate imp. material, 2 errors in technique
2	Inadequate impression material, 3 errors in technique

1	Inadequate impression material, 4 errors in technique
Necessary structures	
5	All necessary structures present (all teeth, complete arch, muccobuccal fold, palate, etc.)
4	Single structure not accurately reproduced
3	2 structures not accurately reproduced
2	3 structures not accurately reproduced
1	4 or more structures not accurately reproduced
POURING THE IMPRESSION	
Voids, fractures and/or air bubbles	
5	No voids, fractures, and/or air bubbles
4	1 void, fracture, and/or air bubble
3	2 voids, fractures, and/or air bubbles
2	3 voids, fractures, and/or air bubbles
1	Multiple voids, fractures and/or air bubbles
Proper technique for mixing and pouring gypsum product	
5	Plaster mixed and flowed properly
4	Plaster not mixed correctly, too thin or too thick
3	Plaster not mixed correctly and filled correctly in impression
2	Plaster not mixed correctly and few voids are created
1	Plaster not flowed correctly, many voids created
Surface qualities	
5	Smooth and hard, excellent quality
4	Mostly smooth, good quality
3	Partly smooth, adequate quality
2	Some roughness, inferior quality
1	Rough, chalky and weak

LAB 11: BLEACHING TRAYS

Patients have developed a great interest in the improvement of their appearance. An increasingly popular treatment to improve aesthetics is bleaching. Many bleaching systems have been marketed to bleach vital teeth in a dental office or in the patient's home. Most bleaching systems contain a bleaching agent that must be placed into a custom tray and placed in the mouth. The purpose of this laboratory exercise is to manufacture a bleaching tray to be used by a patient.

OBJECTIVES

1. List the indications and contraindications for use of the patient-applied, professionally supervised whitening technique.
2. List the indications and contraindications for professionally applied power whitening techniques.
3. Outline the steps of patient-applied, professionally supervised vital whitening technique.
4. Identify the essential elements of home care instructions for the patient using the professionally supervised, self-applied technique.
5. Outline the steps in construction of the bleaching tray, and identify the equipment and materials used.

MATERIALS

- Model
- Bleaching tray blank
- Scissors
- Lab torch

PROCEDURE

CAST/MODEL PREPARATION

1. Assure that the model used for tray fabrication is **dry.**
2. Remove excess stone from the facial area of the cast before forming the material. Hint: trim the model so that approximately 4mm to 8mm of stone is left apical to the gingival sulcus. This step will minimize creasing.
3. Place blockout/resin material of the face of the teeth to be bleached. Blockout should be a thin covering to within 1mm of the gingival margin. Cure the blockout with a curing light.
4. Place the material on the platform of the molding unit.

VACUUM TRAY FORMATION

1. Select the acrylic sheet to be used, place it in the heater frame of the unit.

2. Turn on the heating element.
3. Heat the acrylic sheet until it begins to sag slightly or appears to be forming a large, drooping bubble. DO NOT OVERHEAT. Overheating will cause multiple air bubbles or pitting in the final product.
4. Turn on the suction.
5. Lower the frame over the cast and fasten into position.
6. Apply vacuum pressure for 30 seconds.

FINISHING THE VACUUM FORMED TRAY

1. Allow the acrylic to cool on the cast for approximately 2 to 3 minutes. When cool, separate the tray from the cast.
2. With sharp scissors or a laboratory knife, trim the margin of the bleaching tray. The edge should follow the gingival margin within a .5mm tolerance.
3. Using the torch, flame the edges for a smooth final product.

Bleaching Tray Grade Sheet	
Name	Grade
Date	

Important note: You must submit this grade sheet with your study model.
Study models should have been graded prior to constructing the bleaching trays.
Maximum grade is equivalent to 100%. Add the total points earned, divide by 30, and then multiply by 100.

PREPARING THE STUDY MODEL:	
Trimming	
5	Model adequately trimmed, all excess material removed, model not broken, teeth intact
4	1 area inadequately trimmed, no effect on bleaching tray
3	2 areas inadequately trimmed, teeth touched by model trimmer
2	3-4 areas inadequately trimmed, teeth touched by model trimmer, model broken
1	5 or more areas inadequately trimmed, teeth touched by model trimmer, model broken and not repairable
Applying Block Out Resin	
5	Block out resin adequately applied, little bulk, no sharp edges, covers surface adequately
4	Block out resin has some areas of bulk, mostly adequate
3	Inadequate block out resin applied, 2 errors in technique
2	Inadequate block out resin applied, 3 errors in technique
1	Inadequate block out resin applied, 4 errors in technique
PRODUCING THE BLEACHING TRAY	
Using Vacuum former	
5	Bleaching tray material was adequately placed and formed over model
4	1 void, fracture, and/or air bubble
3	2 voids, fractures, and/or air bubbles
2	3 voids, fractures, and/or air bubbles
1	Multiple voids, fractures and/or air bubbles

Trimming	
5	All edges correctly trimmed to 1 mm or less beyond gingival margin
4	Most edges correctly trimmed, 2 areas trimmed incorrectly
3	Inadequate trimming 3 areas of bleaching tray
2	Inadequate trimming in 4 areas of bleaching tray, too much or too little removed
1	Overall trimming of bleaching tray inadequate, multiple errors
End Product	
5	Smooth edges, no melted areas, no warping
4	Mostly smooth, good quality, 1 area melted/warped
3	Partly smooth, adequate quality, 2 areas melted/warped
2	Some roughness, inferior quality, 3 areas melted/warped
1	Rough edges, melted edges in 4 or more areas