San Juan College Division: Math, Science and Health Careers

SYLLABUS

COURSE#: DHYG 221
COURSE TITLE: Dental Biomaterials
# of CREDITS: 3 (2 + 3 + 0)

CATALOG DESCRIPTION:
A study of the composition, chemical and physical properties, manipulation, and uses of dental materials. Laboratory experiences include the manipulation and application of various materials used in dentistry.
Prerequisites: completed with a "C" or better: DHYG 111, DHYG 113, DHYG 114, DHYG 115, DHYG 217 and ENGL 211 or 218.

COURSE OBJECTIVE:
Upon completion of this course, the student should be able to identify, describe, and evaluate materials routinely used in dentistry according to physical, mechanical and biological characteristics. The student will be able to properly manipulate materials routinely used in dentistry.

COURSE GOALS:
1. Explore the present theoretical and practical knowledge of the composition, properties, manipulative variables and uses of dental materials.
2. To familiarize the student with the current materials used in dentistry to the extent that they will understand the materials' characteristics, indications and contraindications relating to patient treatment.
3. Provide experience in the manipulation of materials through laboratory and clinical exercises, enabling the student to perform selected patient treatment procedures to clinical competency
4. Prepare the student to function as a viable member of the dental health team.

LEARNING OUTCOMES: Upon completion of this course the student will:
1. Be able to define the science of dental materials and describe the vital role that a dental auxiliary plays
   in the preparation and placement of dental materials.
2. Develop an understanding of the chemistry involved in dental materials to include elements, matter, measurement, bonding, and chemical properties of dental materials.
3. Demonstrate infection control and safety practices in dealing with dental materials and proficiency in utilization and maintenance of laboratory equipment.
4. Be able to evaluate effects of specific materials on the oral environment, the effectiveness of such materials in prevention and treatment of oral disease, and the factors which influence the quality of dental materials.
5. Be able to identify and differentiate between various dental materials (in vivo, in vitro and radiographically) and their respective properties.
6. Be able to facilitate the selection, preparation, manipulation, placement, and care of the materials used in dentistry.

7. Actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.
8. Think analytically and creatively to explore ideas, make connection , draw conclusion , and solve problems
9. Exchange ideas and information with clarity and originality in multiple contexts
10. Demonstrate proficiency in the use of technologies in the broadest sense related to their filed of study
11. Act purposefully, reflectively, and respectfully in diverse and complex environments.

This syllabus developed by: Julius N. Manz DDS Date: 10/26/2006

San Juan College

COURSE GUIDE

DHYG 221 Dental Biomaterials (2 + 3 + 0) 3 credit hours

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Office: 55323
Office Hours: Mon 1:00pm – 5:00pm, Tues 8:00am – 10:00am & 4:00pm – 5:00pm,
Wed 8:00am – 11:00am or by appointment.

Required Textbooks: Materials in Dentistry: Principles and Applications (2001) 2nd Ed., Ferracane, J., Philadelphia: Lippincott, Williams & Wilkins.
Radiographic Interpretation for the Dental Hygienist (1993) 1st Ed., Haring, J., Jansen, L., Philadelphia: Saunders

Supplementary Materials: Clinical Aspects of Dental Materials (2000) Gladwin, M., Bagby, M., Philadelphia: Lipincott Williams & Wilkins
Dental Materials: Properties and Manipulation (2004) 8th Ed, Craig, R., Powers J., and Wataha J., St. Louis: Mosby
Current literature
Reference tests available in library

Grading criteria:*

Lecture 60% of total grade
- Quizzes 30%
- Research paper 20%
- Midterm Exam 25%
- Final Comprehensive Exam 25%

Laboratory 40% of total grade
- Lab modules 50%
- Lab competencies 50%

A = 90 -100
B = 80 – 89
C = 75 – 79
D = 65 – 75 **
F = Below 65% **

* *A dental hygienist must exhibit professionalism through the application of a professional code of ethics. Unprofessional conduct will be reflected in the grade and may be grounds for dismissal. Refer to the Student Handbook for further information.*

***A final grade below a "C" (75%) will interrupt a student's progress, and may result in dismissal from the Dental Hygiene Program. It is the responsibility of any student having difficulty with this course to contact the professor immediately and arrange for tutoring and/or other assistance.*

Instructor's Policies:

Preparation:
During this course it is expected that the student prepare for class. This includes reading or viewing the information to be discussed *prior* to class. Students should be prepared to participate in active learning discussions in each class on the topic assigned for that day. If the student has adequately prepared for the class there should be little trouble passing quizzes, exams or completing course assignments.

Attendance Policy:
Students are expected to attend all regularly scheduled classes for which they are registered. Valid reasons for missing classes do not relieve the student from making up any missed work. Students are expected to be in the classroom, laboratory or clinic and be ready to begin the session on time.

Lab/Clinic Usage:
Students are not allowed in any lab or clinical area without direct faculty supervision. If you need to use the lab or clinic outside regularly scheduled class times you must make arrangements with your instructor or other faculty member.

Make-Up Policy:
If a major examination is missed, it is the student's responsibility to make arrangements with the instructor and schedule a Make-Up Examination. *The Make-Up Exam will be different from the one given to the other students and may be oral, written, or a combination of both*. A student will not be allowed to make up quizzes (a zero will be given for each missed quiz).

Assignments:
Assignments are to be handed in properly labeled at the start of class on the date designated. Assignments turned in later will receive a 10% reduction in grade.

Professional Policy:
All students are expected to participate in an active and productive manner which enhances learning for all in the classroom and clinical settings. Students are considered mature enough to seek faculty assistance and to monitor their own progress in meeting course requirements. Professional language and demeanor are expected at all times.

Academic Dishonesty:
Unethical and unprofessional activities will not be tolerated. Refer to the Dental Hygiene Handbook and the SJC Catalogue for more information.

Student Grievance Procedure:
Policies regarding Student Grievance can be found on page 54-55 of the SJC Course Catalog 2003-2004. A student who is experiencing a problem with the course or the course Instructor should make every attempt to resolve the problem with the course Instructor *first*. The student should then appeal to the Program Director. If the response is not adequate to the student, the student should then appeal to the Vice President of Student Services.

Course Outcomes Inventory:
The effectiveness of DHYG 231 is measured by several methods:

1. Completion of all course work with a satisfactory grade.
2. Course evaluations.
3. Analysis of clinical application of material presented.
4. Scores on National and Regional Boards are reviewed and evaluated.

Accommodations Statement:
Students who need accommodations (i.e. note taker, interpreter, special seating, etc.) need to provide accommodation notices to the instructor. Students can contact the Students with Disabilities on Campus (SDOC) Coordinator in the Counseling Center located in the Clocktower Building to make arrangements and provide documentation in accordance with the Americans with Disabilities Act of 1990.

DHYG 221 Dental Materials

Note: Clinical Competency: Students who have demonstrated lab competency must demonstrate such skills in a clinical environment (Practicum or Clinic) to be considered *Clinically Competent.*

Om	Learning Activity	Objectives	Course Outline	Time
6/1 Tues	Course Introduction			2 Hour
	Materials Introduction Chapter 1	1. Explain the overall goal of a course in dental materials and its importance in the current and future training of the oral health care provider. 2. Describe specific conditions within the oral cavity that make it such a demanding environment for the placement and long-term performance of dental materials. 3. List and explain the characteristics of the ideal dental material. 4. Describe the programs that are in place in ensure that quality control is maintained during the manufacture of dental devices and that materials for intraoral use are safe and effective.	I. Goals II. History of Dental Materials III. The Oral Environment IV. Characteristics of the Ideal Dental Material V. Quality Assurance Programs	
	Sutures & Dressings Handout (Sutures and Dressings, Cortell, M)	1. Describe the various types of suture materials used in Dentistry and their indications and contraindications 2. Describe the proper timing and procedure for removal of surgical sutures		
	Dental Dam Handout (Advanced chairside functions)	1. Explain the purpose of the dental dam and identify who places the dental dam on a patient 2. List and explain the advantages and contraindications of the dental dam 3. Identify the armamentarium needed for the dental dam procedure and explain the function of each 4. Explain how to prepare the patient for the dental dam placement, explain how to determine the isolation area: and describe and demonstrate how the dental dam material is prepared 5. List and demonstrate the steps of placing and removing the dental dam		

6/1 (cont)	Pulp Testing Handout (pathways of the pulp) Characteristics of materials Chapter 2	1. Describe how the Electronic Pulp Test (EPT) works 2. List the diagnostic information that can be obtained through use of the EPT 3. Describe the technique for obtaining an EPT 4. List the precautions and limitations of an EPT 5. Discuss different reasons for false-positive and false-negative responses with the EPT 1. Describe the four classes of materials and give dental examples of each		
6/1 Lab	Clinic Emergencies Lab Safety Lab modules overview Sutures & dressings Dental Dam Pulp testing	1. Identify and locate: A - clinic emergency equipment B - lab emergency equipment 2. Review emergency protocol/procedures 1. Demonstrate proper suture removal technique (simulated oral tissue) 2. Mix and place surgical dressing (dentoform) 1. Demonstrate Dental Dam placement (dentoform) 1. Demonstrate EPT technique (fellow student)	I. Emergency management in clinic/lab II. Location/use of safety/emergency equipment	3 Hours

6/7 Mon	Characteristics of materials (cont) Chapter 2 **Quiz**	1. Describe the four classes of materials and give dental examples of each 2. Define thermal conductivity and the coefficient of thermal expansion and discuss their importance in dentistry, using clinical examples 3. Explain the significance of achieving adhesion in dentistry and list physical and clinical factors that determine successful adhesion 4. Define color in terms of hue, value, and chroma and give appropriate values for natural teeth 5. compare tarnish and corrosion in terms of the extent and nature of the degradation they produce on metallic restorations 6. Identify a galvanic cell and discuss its impact in terms of biocompatibility and degradation of existing restorations 7. Define stress and strain and identify elastic modulus, ultimate strength, percent elongation, toughness, resilience, and elastic limit on a stress-strain curve: describe the clinical significance of each for a dental restorative 8. Define hardness, fatigue, creep, and fracture toughness and explain the importance to dental materials 9. Identify and explain the factors that contribute to secondary decay in terms of placement of a dental restoration 10. Explain the hydrodynamic theory of pulp pain and identify possible causes for sensitivity, given a set of clinical observations	I. Classes of Materials – Examples in Dentistry A. Metals B. Ceramics C. Polymers II. Structure of Material A. Bonding B. Atomic arrangements III. Physical characteristics A. Thermal and electrical properties B. Solubility and sorption C. Adhesion Color and Esthetics D. Corrosion IV. Mechanical characteristics A. Types of Forces B. Stress and strain C. Stress-Strain diagram D. Other properties V. Biologic characteristics VI. Summary	

6/7 (cont)	Preventive Materials Chapter 3	1. Compare & contrast preventive & restorative materials. 2. Describe the composition and uses of resin-based pit and fissure sealants. 3. Discuss the causes of failure and clinical success rates for pit and fissure sealants. 4. Describe the preventive resin restoration. 5. Describe the composition of fluoride gels and varnishes. 6. Describe the general composition of glass ionomers used as preventive materials. 7. Compare the clinical results for filled or unfilled resin and glass ionomer pit and fissure sealants. 8. Discuss the release of fluoride from GI and resin-based materials in terms of the quantity and the rate of release. 9. Identify the composition and describe the physical characteristics of a mouth-protecting material. 10. Describe the procedures involved in the formation of a stock and a custom mouthguard and compare the benefits of each.	I. Pit and Fissure Sealants A. History and rational B. Materials C. Handling and placement of resin-based sealants II. Preventive Resin Restorations III. Fluoride-Releasing Agents A. Gels and varnishes B. Glass ionomers C. Resins IV. Mouthguards	
6/8 Tues	Intermediary Materials and Cements Chapter 4	1. Explain the difference in intent when placing a liner rather than a base. 2. Describe the composition and uses of varnishes in dentistry. 3. Compare the different forms of calcium hydroxide materials used as liners. 4. Describe the application of calcium hydroxide and the benefits expected from its use. 5. Describe the procedure for dispensing and mixing lining materials. 6. Explain why glass ionomer is considered to be an excellent lining or base material. 7. Describe the mixing of zinc phosphate cements, and explain why the technique differs from that used to mix glass ionomer. 8. Explain how the working time of zinc phosphate cement can be prolonged. 9. Compare the composition and properties of the materials used as luting cements in dentistry. 10. Compare the clinical performance of glass ionomer and zinc phosphate as luting cements for crowns and bridges.	I. Definitions of terms II. Varnishes A. Uses of varnishes B. Types of varnishes C. Handling an placemen of varnishes D. Characteristics of varnishes III. Liners A. Uses of liners B. Types of liners C. Handling and pl;acement of liners D. Characteristics of liners IV. Bases A. Uses of bases B. Types of bases C. Handling and placement of bases D. Characteisitics of bases V. Cements A. Uses of cements B. Types of cements C. Handling and placement of cements Characteisitics of cements VI. Summary	1 Hour

6/8 Lab	Pit and Fissure Sealants Mouthguard Bases, Liners & Cements	1. Demonstrate proper pit and fissure sealant placement on an extracted tooth 1. Demonstrate production of a custom mouthguard utilizing a vacuum-forming device 1. Demonstrate the proper technique for mixing CaOH, GI, & $ZnPO_4$		3 Hours
6/14 Mon	Direct Esthetic Anterior Restoratives Chapter 5 **Quiz**	1. Compare the properties of composites, compomers, and glass ionomers and describe how specific differences may influence clinical performance. 2. Compare the composition and properties of the different types of glass ionomer restoratives. 3. Describe the proper technique for mixing a conventional glass ionomer restorative. 4. Explain the importance of maintaining a moist, but not wet, environment during the placement of a glass ionomer restorative. 5. Compare the composition and properties of compomers to composites and resin-modified glass ionomer restoratives. 6. Describe the basic components of dentin adhesives and briefly explain how they achieve adhesion to tooth structure.	I. Historical Perspective I. Uses of Composites, Glass Ionomer, and Compomers III. Dental Composites A. Types and packaging B. Composisiton C. Handling and mixing D. Setting reaction E. Finishing F. Characteristics and properties G. Clinical performance IV. Glass Ionomers A. Types and packaging B. Composisiton C. Hadling and mixing D. Setting reaction E. Finishing V. Compomers VI. Enamel and Dentin Adhesives A. Enamel adhesives B. Dentin adhesives VII. Summary	1 Hour

6/15 Tues	Direct Posterior Restoratives Chapter 6	1. Compare the elemental compositions and setting reactions of low-copper and high-copper amalgams. 2. Compare the handling characteristics of lathe-cut, spherical, and admixed amalgams, and describe the placement procedure for each. 3. Compare the creep, strength, and corrosion resistance of low- copper and high-copper amalgams and discuss the reasons for the differences in their clinical performance. 4. Explain the effect of mercury-to-alloy (Hg/alloy) ratio and trituration time and speed on the working and setting time of dental amalgam. 5. Explain the effect of Hg/alloy ratio and plasticity of the mix on the mechanical properties and clinical performance of amalgams. 6. Compare abrasion wear to attrition wear for posterior composites. 7. Describe the placement technique for a class II light activated composite. 8. Describe the compositions and uses of the different types of direct gold restoratives. 9. Briefly describe the technique for the placement of a direct gold restoration.	I. Amalgam A. Uses B. Types and composition C. Mixing and handling D. Setting reaction E. Characteristics and properties F. Clinical success II. Composites A. Uses B. Types and composition C. Mixing and handling D. Setting reaction E. Characteristics and properties F. Clinical success III. Direct Filling Gold IV. Summary	1 Hour
6/15 LAB	Composite and Amalgam	1. Familiarize the student with the characteristics and handling of composite and amalgam. 2. Demonstrate changes in characteristic and handling with changes in curing time, trituration time etc.		3 Hours

6/21 Mon	Materials for Inlays, Onlays, Crowns, and Bridges Chapter 7 **Quiz**	1. List the major benefits and drawbacks of the various types of materials used for inlays, crowns and bridges 2. Define the term, *alloy* and compare the properties of an all9oy with those of a pure metal 3. Define strain hardening and annealing and explain how they affect one's ability to bend an orthodontic wire 4. Identify metals as noble or base and explain the difference between the two 5. Compare the compositions, properties, and uses of th four types of American Dental Association gold alloys 6. Identify the major components in dental porcelains 7. Briefly describe the procedure for building up and firing a self glazing porcelain restoration	I. Types of Materials II. Metals: some basic concepts A. Producing the maetalic structure B. Deformation of metals C. alloying III. Metal: composition, properties and preparation A. Noble meatl alloys B. Base metal alloys IV. Ceramics: Some Basic Concepts V. Ceramics: Composition, Properties, and Preparation A. Dental porcelains B. Other dental ceramics C. Repair of porcelain and ceramic restorations VI. Composites: Composition, Properties, and Preparation A. Reinforced composites VII. Summary	1 Hour
6/22 Tues	**MIDTERM EXAM** Impression Materials Chapter 8	1. Describe the ideal requirements for a dental impression material for dentulous patients. 2. Define inelastic and elastic imp. mat. & contrast their uses. 3. Identify examples of inelastic & elastic imp. materials. 4. Contrast the composition and setting behavior of different inelastic impression materials. 5. Compare the composition, setting behavior, and uses of the two different hydrocolloid impression materials. 6. Compare the composition, dimensional stability, and physical properties of the elastomeric imp. materials. 7. Describe the clinical technique for the appropriate mixing and taking of an alginate impression. 8. Describe the equipment used and the procedures followed when taking an impression with agar hydrocolloid. 9. Describe the clinical technique for the appropriate mixing and taking of an additional silicone impression, using the regular and putty-wash techniques. 10. Indicate an appropriate disinfecting regimen for each type of impression material.	I. Uses of Impression Materials in Dentistry II. Composition of Impression Materials A. Inelastic Materials B. Elastic materials: hydrocolloids C. Elastic materials: elastomers III. Mixing and Handling of Impression Materials A. Inelastic materials B. Elastic materials: hydrocolloids C. Elastic materials: elastomers IV. Characteristics of Impression Materials A. Flexibility B. Accuracy C. Tear strength D. Stability E. Dimensional change F. Surface wetting G. Working and setting time V. Disinfection of Impression Materials VI. Summary	1 Hour

6/22 Lab	Impression materials	1. Demonstrate proper use of hydrocolloid impression materials by taking an accurate impression on a dentoform 2. Demonstrate proper use of elastomeric impression materials by taking an accurate impression on a dentoform		3 Hours
6/28 Mon	Dental Plaster and Stone Chapter 9 **Quiz**	1. Compare the chemical and physical structure of plaster, stone, die stone, and gypsum. 2. Describe the manner in which plaster, stone, and die stone are produced from gypsum. 3. Compare the strength and setting expansion of the different types of plaster and stone. 4. Given a specific dental use, select one of the American Dental Association types of plasters and stones appropriate for that use. 5. Describe the manner in which plaster or stone form gypsum and what physical phenomenon is responsible for the expansion and strength of the material. 6. Explain the effect of water-to-powder ratio, additives, gypsum contaminants, temperature, and mixing on the setting time of plaster or stone. 7. Identify the items needed to mix gypsum products. 8. Identify the correct water-to-powder ratio for the different types of gypsum products. 9. Describe the correct way to mix plaster or stone to minimize porosity. 10. Describe the correct procedure for pouring a gypsum cast from an impression and explain the rationale for this method. 11. Describe the correct procedure fro trimming a full-arch gypsum cast with regard to the objectives of the exercise. 12. Identify possible ways to disinfect a stone cast or die.	I. Uses of Gypsum Products in Dentistry II. Composition of Plaster, Stone, and Gypsum III. Handling and Mixing 1. Dispensing 2. Mixing 3. Cleanup IV. Setting Time 1. Water-to-Powder Ratio 2. Gypsum Contaminants 3. Additives 4. Mixing Time 5. Temperature V. Setting Expansion 1. Water-to-Powder Ratio VI. Properties: Strength and Hardness VII. Types of Plasters and Stones 1. Type I: Impression Plaster 2. Type II: Laboratory or Model Plaster 3. Type III: Laboratory Stone 4. Type IV: Die Stone 5. Type V: High-Strength, High-Expansion Die Stone VIII. Pouring and Trimming a Gypsum Cast IX. Disinfection of Stone Casts or Dies X. Summary	1 Hour

6/29 Tues	Provisional Restoratives Chapter 10	1. Identify the physical requirements for provisional restorative materials. 2. List the components of zinc oxide eugenol provisional filling materials. 3. Compare the strength and durability of zinc oxide eugenol to other cement-restorative materials. 4. List the components of acrylic and bis-acryl provisional filling materials for crowns and bridges. 5. Describe the procedure for making an acrylic or bis-acryl provisional restoration by the direct technique. 6. Describe the procedure for making an acrylic or bis-acryl provisional restoration by the indirect technique.	I. Uses of Provisional Restoratives in Dentistry II. Types of Provisional Restoratives 1. Zinc Oxide Eugenol 2. Acrylic 3. Composites 4. Aluminum Crowns, Denture Resins, and Others III. Mixing and Placing an Acrylic Provisional Restorative 1. Single-Tooth Provisional Restoration 2. Provisional Bridge IV. Summary	1 Hour
	Polymers for Prosthetics Chap. 12	1. .Identify the steps in addition and condensation polymerization and describe the different methods available to begin the reaction. 2. Explain how the size of a polymer affects its strength, stiffness and dimensional stability. 3. Explain the effect of cross-linking agents and plasticizers on the structure and hardness of a polymer 4. List the components in the powder and liquid of both heat cured and cold cured dental acrylics for dentures, appliances and custom trays. 5. List the different types of formulation of denture base plastics and explain the way(s) in which they are an improvement over conventional acrylic. 6. Describe the stages during the setting of dental acrylic in terms of the physical and chemical changes occurring. 7. Explain the physical and compositional differences between denture bases, liners and tissue conditioners. 8. Explain the effect of improper heating, cooling, and pressure application on the strength, fit and esthetics of a heat-cured denture 9. Describe the procedure for constructing a cold-cured acrylic custom tray.	I. Polymeric materials: the basics 1. Definitions and Uses in Dentistry 2. Chemistry of Polymerization 3. Polymer Size and It's Effect 4. Polymer Structure and It's Effect 5. Properties of Polymers II. Prosthetic Resins 1. Denture Base Materials 2. Denture Liners and Conditioners 3. Other Resin Systems III. Production of a Heat Processed Denture IV. Construction of an Acrylic Custom Tray V. Summary	

6/29 Lab	Study model Custom tray	1. Demonstrate the ability to take an accurate study model on a fellow student to include i. Maxillary and mandibular alginate impressions ii. Bite registration iii. Pour up and properly trim study models 1. Fabricate a custom tray on study models		
7/5	HOLIDAY	No class	Have fun and relax	
7/6 Tues	Metal Alloys for Orthodontics, Prosthodontics, and Pediatric Dentistry Chapter 13	1. Describe the uses of base metals in dentistry. 2. Explain what is responsible for the corrosion resistance of each of the alloys used in orthodontics and prosthodontics. 3. Compare the composition of the four major types of alloys used to make orthodontic wires. 4. Compare the properties of the four major types of alloys used to make orthodontic wires. 5. Compare the composition of nickel-chromium and cobalt-chromium prosthetic alloys. 6. Describe concerns over the biocompatibility of certain types of alloys used in dentistry. 7. Explain pitting corrosion and identify alloys that may be susceptible to it.	I. Uses of Metal Alloys in Dentistry II. Types of Alloys 1. Stainless Steels 2. cobalt-Chromium Alloys 3. Pure Titanium and Titanium Alloys 4. Nickel-Chromium Alloys III. Properties of Alloys 1. Alloys for Orthodontic Wires 2. Alloys for Prosthodontics VI. Biocompatibility VII. Summary	1 Hour

7/6 (cont)	Abrasion and Polishing Chapter 14	1. Identify the goals of finishing and polishing of dental restorations and tooth structure. 2. Define abrasion, finishing, and polishing and explain how they differ. 3. Identify the factors that affect the rate and efficiency of abrasion in dentistry. 4. Explain the Mohs' scale and use it to make relative comparisons between the abrasives and substrates found in dentistry. 5. Identify the abrasives used and the typical procedure to be followed to finish and polish dental composites. 6. Identify the abrasives used and the typical procedure to be followed to finish and polish dental casting alloys. 7. Identify the abrasives used and the typical procedure to be followed to finish and polish dental ceramics and porcelains. 8. Identify the abrasives used and the typical procedure to be followed to finish and polish dental acrylics.	I. Definitions and Theory of Finishing II. Factors Affecting Finishing 1. Hardness 2. Shape 3. Size 4. Pressure 5. Speed 6. Lubrication III. Instruments Used in Cutting and Abrading 1. Composition of Abrasives 2. Prophylaxis Pastes, Dentifrices, and Denture Cleansers IV. Finishing Procedures 1. Composites 2. Amalgam 3. Alloys 4. Ceramics and Porcelains 5. Acrylics V. Summary	
	Dental Implants Chapter 15	1. Describe the three different types of dental implants and compare their uses. 2. Explain what is meant by osseointegration and how it affects the success of a dental implant. 3. Identify the composition and compare the properties of the various types of metals used in dental implants. 4. Explain the rationale for applying a surface coating to a metallic dental implant. 5. Explain what is meant by a "bioactive" ceramic. 6. Identify the composition of the ceramics used for dental implants. 7. Identify factors that can affect the success of dental implant therapy. Identify criteria for success of endosseous implants	I. Uses of Implants in Dentistry II. Types of Dental Implants III. Composition of Implant Materials 1. Metals 2. Ceramics 3. Coated Metals IV. Clinical Factors Concerning Implants 1. Criteria for Patient Selection 2. Criteria for Clinical Success V. Summary	
7/6 Lab	**FINAL EXAM**			1 Hour