

University of Hawaii Maui College  
DH 252L - Dental Materials Lab

1. **Course Alpha.**

DH

2. **Course Number.**

252L

3. **Course Title/Catalog Title.**

Dental Materials Lab

4. **Number of Credits.**

2

5. **Contact Hours/Type.**

- Hour lab (6)

6. **Course Description.**

Develops laboratory experience providing students with techniques in preparation and utilization of dental materials.

7. **Pre-Requisites.**

DH 158 with a C or better.

8. **Co-requisites.**

DH 252

9. **Recommended Preparation.**

none

10. **Is this a cross-listed course?**

NO

11. **Reason for Proposal. Why is this course being proposed or modified? This question requires specific information as part of the explanation.**

Align with other DH programs In addition, the dental materials course (DENT 154) was offered in the dental assisting program. It is proposed that the dental assisting courses as prerequisites to the dental hygiene program.

12. **Effective Semester and Year.**

Spring 2016

13. **Grading Method. What grading methods may be used for this course?**

- Letter grade only/No Audit (0)

**14. Is this course repeatable for credit? How often can this course be counted toward a degree or certificate?**

NO

**15. Course Student Learning Outcomes (SLOs).**

Course SLO/Competency	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Demonstrate safe practice in the laboratory	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																					
Demonstrate infection control practices.	<input checked="" type="checkbox"/>																							
Demonstrate use of instruments of measure.				<input checked="" type="checkbox"/>																				
Demonstrate care and use of dental equipment in the laboratory.					<input checked="" type="checkbox"/>																			
Identify impression materials and demonstrate the manipulation technique for each product including: wax and impression compound, zinc oxide-eugenol (ZOE), agar or reversible hydrocolloid, alginate, polysulfides, condensation silicones, polyethers, and addition silicones.						<input checked="" type="checkbox"/>																		
Identify gypsum materials and demonstrate the manipulation technique producing a variety of gypsum products to include:							<input checked="" type="checkbox"/>																	
Take an alginate impression on a student partner.								<input checked="" type="checkbox"/>																
Fabricate and trim a study model.									<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
Demonstrate the application and manipulation of the following dental waxes.												<input checked="" type="checkbox"/>												
Recognize the application and materials used for fixed indirect restorations and prostheses.														<input checked="" type="checkbox"/>										
Demonstrate the application and manipulation of dental amalgam.															<input checked="" type="checkbox"/>									
Demonstrate the application and manipulation of dental materials used in removable prostheses and a variety of oral appliances.													<input checked="" type="checkbox"/>											
Demonstrate the application and manipulation of adhesive and direct polymeric restorative materials.																<input checked="" type="checkbox"/>								
Demonstrate the application of a variety of abrasive polishing materials used in the clinical or laboratory setting.																	<input checked="" type="checkbox"/>							
Fabricate a tray to be used for tooth bleaching.																					<input checked="" type="checkbox"/>			
Demonstrate the application and manipulation of a variety of dental cements.																						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate the application and manipulation of a variety of temporary restorations.																								<input checked="" type="checkbox"/>

**LEGEND**

- A. Recognize laboratory housekeeping practices.
- B. Locate emergency equipment and procedures.
- C. Describe safety and risk in terms of common hazards in everyday life and work in a dental office.
- D. Demonstrate use of instruments of measure.
- E. Demonstrate care and use of dental equipment in the laboratory.
- F. Identify impression materials and demonstrate the manipulation technique for each product including: wax and impression compound, zinc oxide-eugenol (ZOE), agar or reversible hydrocolloid, alginate, polysulfides, condensation silicones, polyethers, and addition silicones.
- G. Identify gypsum materials and demonstrate the manipulation technique producing a variety of gypsum products to include:
- H. Take an alginate impression on a student partner.
- I. Select the appropriate tray by using the criteria.

- J. Demonstrate mixing of the alginate, loading, seating, and removal of the tray, to obtain acceptable alginate impressions.
- K. Fabricate and trim a study model.
- L. Trim the study model on the model trimmer.
- M. Demonstrate the application and manipulation of dental waxes.
- N. Recognize the application and materials used for fixed indirect restorations and prostheses.
- O. Demonstrate the application and manipulation of dental amalgam.
- P. Demonstrate the application and manipulation of dental materials used in removable prostheses and a variety of oral appliances.
- Q. Demonstrate the application and manipulation of adhesive and direct polymeric restorative materials.
- R. Describe an adhesive in your own words.
- S. Recall three benefits the patient receives from restorations that are bonded to tooth structure.
- T. Demonstrate the application of a variety of abrasive polishing materials used in the clinical or laboratory setting.
- U. Fabricate a tray to be used for tooth bleaching.
- V. Demonstrate the application and manipulation of a variety of dental cements.
- W. Explain the importance of adhesion and microleakage to the clinical use of dental cement.
- X. Demonstrate the application and manipulation of a variety of temporary restorations.

Course SLO/PSLO	Demonstrate their cumulative knowledge and skill by successfully passing both written and clinical dental hygiene examinations.	Provide comprehensive dental hygiene care to promote patient health and wellness using critical thinking and problem solving in the provision of evidence-based practice.	Provide accurate, consistent, and complete documentation for assessment, and evaluation of dental hygiene services
Demonstrate safe practice in the laboratory	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate infection control practices.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Demonstrate use of instruments of measure.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate care and use of dental equipment in the laboratory.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Identify impression materials and demonstrate the manipulation technique for each product including: wax and impression compound, zinc oxide-eugenol (ZOE), agar or reversible hydrocolloid, alginate, polysulfides, condensation silicones, polyethers, and addition silicones.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Identify gypsum materials and demonstrate the manipulation technique producing a variety of gypsum products to include:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Take an alginate impression on a student partner.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Fabricate and trim a study model.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Demonstrate the application and manipulation of the following dental waxes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Recognize the application and materials used for fixed indirect restorations and prostheses.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate the application and manipulation of dental amalgam.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Demonstrate the application and manipulation of dental materials used in removable prostheses and a variety of oral appliances.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate the application and manipulation of adhesive and direct polymeric restorative materials.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate the application of a variety of abrasive polishing materials used in the clinical or laboratory setting.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Fabricate a tray to be used for tooth bleaching.	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
Demonstrate the application and manipulation of a variety of dental cements.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Demonstrate the application and manipulation of a variety of temporary restorations.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

## 16. Course Competencies.

Competency
Recognize laboratory housekeeping practices.
Locate emergency equipment and procedures.
Describe safety and risk in terms of common hazards in everyday life and work in a dental office.
Demonstrate use of instruments of measure.
Demonstrate care and use of dental equipment in the laboratory.
Identify impression materials and demonstrate the manipulation technique for each product including: wax and impression compound, zinc oxide-eugenol (ZOE), agar or reversible hydrocolloid, alginate, polysulfides, condensation silicones, polyethers, and addition silicones.
Identify gypsum materials and demonstrate the manipulation technique producing a variety of gypsum products to include:
Take an alginate impression on a student partner.
Select the appropriate tray by using the criteria.
Demonstrate mixing of the alginate, loading, seating, and removal of the tray, to obtain acceptable alginate impressions.
Fabricate and trim a study model.
Trim the study model on the model trimmer.
Demonstrate the application and manipulation of dental waxes.
Recognize the application and materials used for fixed indirect restorations and prostheses.
Demonstrate the application and manipulation of dental amalgam.
Demonstrate the application and manipulation of dental materials used in removable prostheses and a variety of oral appliances.
Demonstrate the application and manipulation of adhesive and direct polymeric restorative materials.
Describe an adhesive in your own words.
Recall three benefits the patient receives from restorations that are bonded to tooth structure.
Demonstrate the application of a variety of abrasive polishing materials used in the clinical or laboratory setting.
Fabricate a tray to be used for tooth bleaching.
Demonstrate the application and manipulation of a variety of dental cements.
Explain the importance of adhesion and microleakage to the clinical use of dental cement.
Demonstrate the application and manipulation of a variety of temporary restorations.

## 17. Recommended Course Content and Timeline. The course content facilitates the course competencies. Course content may be organized by weeks, units, topics or the like.

Content
Week 1 Intro to Lab/Instrument Sign up/Rules and Regulations. Power Point- Infection Control, Lab Projects/Measuring devices/Boley Gauge/Metric Ruler Usage
Week 2 MSDS Labeling Exercise.
Week 3 Enamel and Dentin Bonding.
Week 4-5 Apply topical fluoride including fluoride varnish, applying dental sealants.
Week 6 Shade taking. discuss contraindications of ultrasonic use on porcelain crowns, as well as APF's. Handle teeth that exhibit creep, corrosion and tarnished amalgams.
Week 7 Denture and implant care.
Week 8 Overhang removal. Mixing zinc oxide eugenol cement: primary and secondary consistency. Mixing polycarboxylate cement: primary and secondary consistency. Glass ionomer cement: pre-dosed capsules. Mixing resin-based cement: light cure and dual-cured.
Week 9-10 Making an alginate impression. Making a double-bite impression for a crown. Bite registration with elastomeric material. Disinfection of impression material or bite registration.
Week 11 Mixing gypsum products. Pouring the cast and base. Trimming diagnostic casts. Separating the impression.
Week 12 Fabrication of custom acrylic impression tray. Fabrication of record bases with light-cured acrylic resin.
Week 13-14 Metal provisional crown. Polycarboxylate provisional crown. Custom provisional crown - direct technique.
Week 15-16 Wax bite registration.

## 18. Program Learning Outcomes.

### Program SLO

1. Demonstrate their cumulative knowledge and skill by successfully passing both written and clinical dental hygiene examinations.
2. Provide comprehensive dental hygiene care to promote patient health and wellness using critical thinking and problem solving in the provision of evidence-based practice.
3. Provide accurate, consistent, and complete documentation for assessment, and evaluation of dental hygiene services.

## 19. College-wide Academic Student Learning Outcomes (CASLOs).

<input checked="" type="checkbox"/>	<b>Creativity</b> - Able to express originality through a variety of forms. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>Critical Thinking</b> - Apply critical thinking skills to effectively address the challenges and solve problems. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>Information Retrieval and Technology</b> - Access, evaluate, and utilize information effectively, ethically, and responsibly. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>Oral Communication</b> - Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>Quantitative Reasoning</b> - Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately. <input checked="" type="checkbox"/> Preparatory Level
<input checked="" type="checkbox"/>	<b>Written Communication</b> - Write effectively to convey ideas that meet the needs of specific audiences and purposes. <input checked="" type="checkbox"/> Preparatory Level

## 20. Linking. CLICK ON CHAIN LINK ICON IN UPPER RIGHT HAND CORNER TO BEGIN LINKING.

## 21. Method(s) of delivery appropriate for this course.

- Classroom/Lab (0)

## 22. Text and Materials, Reference Materials, and Auxiliary Materials.

- Hatrick,Eackle,Bird. Clinical Applications for Dental Assistants and Dental Hygienist. 2nd. Saunders Elsevier, 2011, 978-1-4377-0855.

## 23. Maximum enrollment.

12

## 24. Particular room type requirement. Is this course restricted to particular room type?

YES

Dental Lab in Dental Clinic.

## 25. Special scheduling considerations. Are there special scheduling considerations for this course?

NO

**26. Are special or additional resources needed for this course?**

no

**27. Does this course require special fees to be paid for by students?**

NO

**28. Does this course change the number of required credit hours in a degree or certificate?**

yes, we are eliminating 9 dental assisting credits and replacing with 6 credits in the dental hygiene curriculum.

**29. Course designation(s) for the Liberal Arts A.A. degree and/or for the college's other associate degrees.**

Degree	Program	Category
Associate in Arts:	Liberal Arts	LE - Elective
AS:	Allied Health - Dental Hygiene	PR - Program Requirement
AAS:		
BAS:		
Developmental/Remedial:		

**30. Course designation(s) for other colleges in the UH system.**

None at this time, we are attempting to align with UH Manoa.

**31. Indicate the year and page # of UHMC catalog referred to. For new or modified courses, please indicate the catalog pages that need to be modified and provide a sheet outlining those changes.**

2014-2015 pages 43, 107 & 108.

**32. College-wide Academic Student Learner Outcomes (CASLOs).**

Standard 1 - Written Communication	
Write effectively to convey ideas that meet the needs of specific audiences and purposes.	
Outcome 1.1 - Use writing to discover and articulate ideas.	1
Outcome 1.2 - Identify and analyze the audience and purpose for any intended communication.	1
Outcome 1.3 - Choose language, style, and organization appropriate to particular purposes and audiences.	1
Outcome 1.4 - Gather information and document sources appropriately.	1
Outcome 1.5 - Express a main idea as a thesis, hypothesis, or other appropriate statement.	1
Outcome 1.6 - Develop a main idea clearly and concisely with appropriate content.	1
Outcome 1.7 - Demonstrate a mastery of the conventions of writing, including grammar, spelling, and mechanics.	1
Outcome 1.8 - Demonstrate proficiency in revision and editing.	1
Outcome 1.9 - Develop a personal voice in written communication.	1
Standard 2 - Quantitative Reasoning	
Synthesize and articulate information using appropriate mathematical methods to solve problems of quantitative reasoning accurately and appropriately.	
Outcome 2.1 - Apply numeric, graphic, and symbolic skills and other forms of quantitative reasoning accurately and appropriately.	1
Outcome 2.2 - Demonstrate mastery of mathematical concepts, skills, and applications, using technology when appropriate.	1
Outcome 2.3 - Communicate clearly and concisely the methods and results of quantitative problem solving.	1
Outcome 2.4 - Formulate and test hypotheses using numerical experimentation.	1

Outcome 2.5 - Define quantitative issues and problems, gather relevant information, analyze that information, and present results.	1
Outcome 2.6 - Assess the validity of statistical conclusions.	1
<b>Standard 3 - Information Retrieval and Technology.</b> Access, evaluate, and utilize information effectively, ethically, and responsibly.	
Outcome 3.1 - Use print and electronic information technology ethically and responsibly.	1
Outcome 3.2 - Demonstrate knowledge of basic vocabulary, concepts, and operations of information retrieval and technology.	1
Outcome 3.3 - Recognize, identify, and define an information need.	1
Outcome 3.4 - Access and retrieve information through print and electronic media, evaluating the accuracy and authenticity of that information.	1
Outcome 3.5 - Create, manage, organize, and communicate information through electronic media.	1
Outcome 3.6 - Recognize changing technologies and make informed choices about their appropriateness and use.	1
<b>Standard 4 - Oral Communication</b> Practice ethical and responsible oral communications appropriately to a variety of audiences and purposes.	
Outcome 4.1 - Identify and analyze the audience and purpose of any intended communication.	1
Outcome 4.2 - Gather, evaluate, select, and organize information for the communication.	1
Outcome 4.3 - Use language, techniques, and strategies appropriate to the audience and occasion.	1
Outcome 4.4 - Speak clearly and confidently, using the voice, volume, tone, and articulation appropriate to the audience and occasion.	1
Outcome 4.5 - Summarize, analyze, and evaluate oral communications and ask coherent questions as needed.	1
Outcome 4.6 - Use competent oral expression to initiate and sustain discussions.	1
<b>Standard 5 - Critical Thinking</b> Apply critical thinking skills to effectively address the challenges and solve problems.	
Outcome 5.1 - Identify and state problems, issues, arguments, and questions contained in a body of information.	1
Outcome 5.2 - Identify and analyze assumptions and underlying points of view relating to an issue or problem.	1
Outcome 5.3 - Formulate research questions that require descriptive and explanatory analyses.	1
Outcome 5.4 - Recognize and understand multiple modes of inquiry, including investigative methods based on observation and analysis.	1
Outcome 5.5 - Evaluate a problem, distinguishing between relevant and irrelevant facts, opinions, assumptions, issues, values, and biases through the use of appropriate evidence.	1
Outcome 5.6 - Apply problem-solving techniques and skills, including the rules of logic and logical sequence.	1
Outcome 5.7 - Synthesize information from various sources, drawing appropriate conclusions.	1
Outcome 5.8 - Communicate clearly and concisely the methods and results of logical reasoning.	1
Outcome 5.9 - Reflect upon and evaluate their thought processes, value system, and world views in comparison to those of others.	1
<b>Standard 6 - Creativity</b> Able to express originality through a variety of forms.	
Outcome 6.1: Generate responses to problems and challenges through intuition and non-linear thinking.	1
Outcome 6.2: Explore diverse approaches to solving a problem or addressing a challenge.	1
Outcome 6.3: Sustain engagement in activities without a preconceived purpose.	1
Outcome 6.4: Apply creative principles to discover and express new ideas.	1
Outcome 6.5: Demonstrate the ability to trust and follow one's instincts in the absence of external direction	1
Outcome 6.6: Build upon or adapt the ideas of others to create novel expressions or new solutions.	1

### 33. Additional Information