

DA R012: DENTAL MATERIALS FOR DENTAL ASSISTING

Originator

aderdiarian

Co-Contributor(s)
Name(s)

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College

Oxnard College

Discipline (CB01A)

DA - Dental Assistant

Course Number (CB01B)

R012

Course Title (CB02)

Dental Materials for Dental Assisting

Banner/Short Title

Dental Materials for DA

Credit Type

Credit

Start Term

Fall 2021

Catalog Course Description

This course teaches the composition and use of restorative materials, impressions materials, pouring dental impressions, the procedural steps in using composite resin material, temporary restorative materials used in dentistry and the role of the dental team in the various procedures performed.

Taxonomy of Programs (TOP) Code (CB03)

1240.10 - *Dental Assistant

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

C (Not transferable)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

C - Clearly Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

Y - Not Applicable

Support Course Status (CB26)

N - Course is not a support course

Field trips

Will not be required

Grading method

Letter Graded

Does this course require an instructional materials fee?

No

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours

Carnegie Unit Override

No

In-Class

Lecture

Minimum Contact/In-Class Lecture Hours

35

Maximum Contact/In-Class Lecture Hours

35

Activity

Laboratory

Minimum Contact/In-Class Laboratory Hours

52.5

Maximum Contact/In-Class Laboratory Hours

52.5

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

87.5

Total Maximum Contact/In-Class Hours

87.5

Outside-of-Class**Internship/Cooperative Work Experience**

Paid

Unpaid

Total Outside-of-Class**Total Outside-of-Class****Minimum Outside-of-Class Hours**

70

Maximum Outside-of-Class Hours

70

Total Student Learning**Total Student Learning****Total Minimum Student Learning Hours**

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Corequisites

DA R010 and DA R011 and DA R013 and DA R014, and DA R015

Advisories on Recommended Preparation

High School Diploma or GED and ENGL R101 or ENGL R101H

Limitations on Enrollment

Current CPR certification for health care provider (American Heart Association) or professional rescuer (American Red Cross)

Proof of freedom from and immunity to communicable diseases

No acrylic or long nails in clinical settings

Current negative TB test or chest x-ray

Others (specify)

Physical examination demonstrating general good health

No visible tattoos or visible body piercings except single studs in earlobes

Other Limitations on Enrollment

Admittance to the Dental Assisting program per application process.

Requisite Justification**Requisite Type**

Advisory

Requisite

ENGL R101 or ENGL R101H

Requisite Description

Course not in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Advisory

Requisite

High School Diploma or GED

Requisite Description

Credit program requisite (credit only)

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

DA R010

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

DA R011

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

DA R013

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

DA R014

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Requisite Type

Corequisite

Requisite

DA R015

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Content review

Student Learning Outcomes (CSLOs)**Upon satisfactory completion of the course, students will be able to:**

- | | |
|---|--|
| 1 | Determine the correct dental cement for a specific procedure |
| 2 | Determine the correct impression material for a specific procedure |
| 3 | Properly duplicate basic chairside duties of a dental assistant in a general dental practice |

Course Objectives**Upon satisfactory completion of the course, students will be able to:**

- | | |
|----|--|
| 1 | List the various restorative materials used in dentistry |
| 2 | Describe the physical, electrical and mechanical properties of materials used in dentistry |
| 3 | Identify the effects of the oral environment may have on dental materials as well as the effect dental material may have on the oral environment |
| 4 | Describe the role that preventative dental materials play in preventing oral disease |
| 5 | List the various types of materials used for esthetic dental restorations |
| 6 | List the role amalgam restorations are playing in restorative dentistry in the past, present and future |
| 7 | Explain and know the finishing, polishing and cleansing materials used in dentistry |
| 8 | Demonstrate the mixing of dental cement to proper consistency in a reasonable length of time |
| 9 | Describe the functions of an impression material as it relates to oral tissue |
| 10 | Describe the significance of accuracy in using impression material and restorative material. |
| 11 | Describe and demonstrate on a model cast or die used in dentistry to duplicate accurately the hard or soft oral tissues or both |
| 12 | List the various types of waxes used in dentistry |
| 13 | Describe the noble metals used for restorative materials, prosthetics appliances and crown and bridge fabrication |

Course Content**Lecture/Course Content**

1. Introduction to Dental Materials
 - a. State the main objectives of restorative dentistry
 - b. Describe why no single restorative material is suitable for all restorations
 - c. Illustrate why different properties are required for anterior and posterior restorations
 - d. Explain why a cement base must be used in the restoration of some teeth
 - e. Describe the advantages of a porcelain fused to metal crown
 - f. List the essential properties required of metals for dental bridges
 - g. Describe dental restorations when a large number of teeth or all the teeth are missing from a dental arch

- h. Safety in the dental laboratory
 - i. Dental laboratory equipment
- 2. Properties of Dental Materials
 - a. Mechanical properties
 - b. Thermal change
 - c. Electric properties
 - d. Corrosive properties
 - e. Solubility
 - f. Application properties
- 3. Preventive Dental Materials
 - a. Indicate the components in fluoride gels, rinses, and varnishes
 - b. Compare the characteristics of different types of fluoride treatments
 - c. Describe the clinical effectiveness of fluoride gels
 - d. List the steps in applying fluoride gels
- 4. Pit and Fissure Sealants
 - a. Describe the uniqueness of pit and fissure x=caries compared to smooth-surface caries
 - b. List the components in light activated and amine accelerated resin sealants and indicate their function
 - c. Describe factors that effect the penetration of a sealant into a fissure
 - d. Discuss the retention and efficacy of sealants
 - e. Understand safety concerns for the light curing units
- 5. Esthetic Restorative Materials
 - a. Understand the describe the various types of esthetic materials available
 - i. Composites
 - ii. Veneers
 - iii. Inlays
 - iv. On lays
 - v. Porcelain-fused-to-metal
 - vi. Bridges
 - vii. Implants
 - viii. Indirect versus direct restorations.
- 6. Impression Materials
 - a. Classifications of Impressions
 - i. Preliminary impressions
 - ii. Final impression
 - iii. Bite registration
- 7. Irreversible Hydrocolloid Materials
 - a. Procedure-mixing alginate impression
 - b. Taking maxillary and mandibular impressions
- 8. Bonding Agents
 - a. Indicate components used in bonding
 - b. Describe properties of bonding agents and indicate their clinical importance
 - c. Describe the manipulation of bonding agents
- 9. Hybrid Ionomers
 - a. Describe the uses of glass ionomers
 - b. Indicate components used in glass ionomers
 - c. Describe the properties of glass ionomers

Laboratory or Activity Content

1. Rubber Dam: Students will be able to place and remove a rubber dam on both the maxillary and mandibular arches to competency.
2. Students will be able to demonstrate mixing zinc phosphate cement, IRM, temporary cement, and glass ionomer cement to competency.
3. Impression materials: students will be able to mix and manipulate alginate, polyvinylsiloxane, and rubber based impression materials to competency.
4. Students will be able to demonstrate taking diagnostic impressions to competency.
5. Students will demonstrate proper pouring up and trimming of diagnostic maxillary and mandibular casts.
6. Students will show competence in fabricating bleaching trays.
7. Students will demonstrate proper handling and manipulation of restorative materials such as dental amalgam and composite materials.

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Problem solving exercises
Skills demonstrations
Written expression

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Clinical demonstration
Essay exams
Essays
Group projects
Individual projects
Laboratory activities
Projects
Problem-Solving Assignments
Quizzes
Skills demonstrations
Skill tests
Simulations

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Audio-visual presentations
Collaborative group work
Clinical demonstrations
Class activities
Class discussions
Distance Education
Demonstrations
Group discussions
Guest speakers
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Laboratory activities
Lecture
Small group activities

Describe specific examples of the methods the instructor will use:

- 1) **Audio Visual Presentations:** Instructor utilizes multimedia presentations to demonstrate the course topics, specifically to highlight safety and accident prevention.
- 2) **Class Activities:** Students will demonstrate understand and competency of the material by numerous practice activities, to include equipment familiarization, and demonstration of procedures. These activities will be under the direct supervision of a laboratory instructor.
- 3) **Class Discussions:** The instructor will encourage participation and learning by facilitating discussions of the course content.
- 4) **Clinical Demonstrations:** Faculty will demonstrate the proper use of instruments, equipment, safety protocols and correct clinical procedures of dental radiography through the use of mannequins and typodonts.
- 5) **Collaborative group work:** Laboratory faculty will encourage learning by assignments in lab which will foster the cooperation and practice of basic dental assisting responsibilities, simulating dental treatment.
- 6) **Demonstrations:** Instructors will demonstrate procedures, assembly, materials and equipment to the students through live demonstrations or through A/V resources when needed.
- 7) **Distance Education:** Instructors will have the ability to provide the didactic portion of the course through Distance Education. They will utilize lecturing with Powerpoint slides, A/V presentations and encouraging discussions among the students via the online method.
- 8) **Group Discussions:** Instructors will be able to reinforce learning objectives and material by encouraging discussions of the course content. These discussions will encourage knowledge of the subject material but also incorporate other aspects of the course learned in concurrent classes.
- 9) **Guest Speakers:** Whenever possible, guest speakers will be invited to share their unique and expert perspective on topics germane to the course, encouraging dialogue and discussion in the class.
- 10) **Instructor-guided interpretation and analysis:** Laboratory instructors will work with students in the clinic, encouraging them to evaluate their progress and analyze procedures as to safety and effectiveness. In addition, instructors will guide students as they

become exposed to the various dental materials and ensure their safe manipulation, illustrating, whenever possible, ways to improve material handling.

11) **Instructor-guided use of technology:** Laboratory instructors will work with students in the clinic to help them gain competence and mastery of the technology involved in dental materials. Use of mannequins and typodonts will assist in the process. Students will become familiar with both the material and the equipment used with each piece of technology.

12) **Laboratory Activities:** Laboratory instructors will demonstrate and emphasize the didactic material in the clinical setting. They will demonstrate and supervise students as they manipulate the dental materials while utilizing mannequins and typodonts. These activities will include role playing, exercises involving clinic safety, infection control, equipment management and patient interactions.

13) **Lectures:** The class employs traditional lectures with Powerpoint presentations to present the material, in addition to supplemental lecture material provided through the online portal.

14) **Small Group Activities:** Will help emphasize the material in a manner which encourages interaction with classmates and stimulates real world activities.

8) **Internet research:** Instructors will utilize professional websites to provide students up to date information and protocols for dental radiology, in addition to augmenting the traditional instructional methods.

9) **Laboratory Activities:** Laboratory instructors will demonstrate and emphasize the didactic material in the clinical setting utilizing both the analog and digital x-ray formats. They will utilize mannequins, typodonts, and live patients. These activities will include role playing, exercises involving equipment management and patient interactions.

Representative Course Assignments

Writing Assignments

1. Research paper on a topic relating to one of the course material such as: The different uses of dental cements

Critical Thinking Assignments

Describe the significance of accuracy in using impression material and restorative material.

Describe why no single restorative material is suitable for all restorations

Reading Assignments

1. Doni L. Bird, Modern Dental Assisting
 - a. Restorative and Esthetic dental materials
 - b. Dental liners, bases, and bonding systems
 - c. Dental cements
 - d. Impressions materials
 - e. Laboratory materials and procedures
 - f. Universal precautions

Skills Demonstrations

- 1) Students will demonstrate an understanding and ability to follow the proper universal (infection control) precautions
- 2) Students will be required to demonstrate use of the various dental materials presented in class, their use, clean up, and storage.
- 3) Students will be required to demonstrate basic dental assisting skills by assembling a tollfemeyer matrix band, placing a rubber dam isolation system, mixing and placing dental liners, bases, buildups and cements. Preparing teeth for adhesive dentistry and making dental impressions.

Other assignments (if applicable)

1. A minimum of 5 hours per week outside of regular classroom doing the following:
 - a. Independent study

Outside Assignments

District General Education

- A. Natural Sciences**
- B. Social and Behavioral Sciences**
- C. Humanities**
- D. Language and Rationality**
- E. Health and Physical Education/Kinesiology**
- F. Ethnic Studies/Gender Studies**

CSU GE-Breadth

- Area A: English Language Communication and Critical Thinking**
- Area B: Scientific Inquiry and Quantitative Reasoning**
- Area C: Arts and Humanities**
- Area D: Social Sciences**
- Area E: Lifelong Learning and Self-Development**
- Area F: Ethnic Studies**

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

- Area 1: English Communication**
- Area 2A: Mathematical Concepts & Quantitative Reasoning**
- Area 3: Arts and Humanities**
- Area 4: Social and Behavioral Sciences**
- Area 5: Physical and Biological Sciences**
- Area 6: Languages Other than English (LOTE)**

Textbooks and Lab Manuals

Resource Type

Textbook

Description

Bird, Doni L. (2020). *Modern Dental Assisting* (13th). St. Louis Elsevier Saunders.

Resource Type

Other Instructional Materials

Description

Actual dental materials being taught in the course such as: composite materials, impressions materials, waxes, cements etc..

Library Resources

Sufficient Library Resources exist

Yes

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (51%–99% online)

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Didactic instruction will include lectures with Powerpoint presentations. Supplemental lecture material will be provided via the online portal. Students will receive online exercises and quizzes through the online portal

Examinations

Hybrid (51%–99% online) Modality

Online

Primary Minimum Qualification

DENTAL TECHNOLOGY

Additional local certifications required

Dental assisting faculty must have background in and current knowledge of dental assisting, the specific subjects they are teaching and educational theory and methodology e.g., curriculum development, educational psychology, test construction, measurement and evaluation. Faculty providing didactic instruction must have earned at least a baccalaureate degree or be currently enrolled in a baccalaureate degree program. Laboratory, preclinical and clinical faculty must be a Dental Assisting National Board "Certified Dental Assistant" or a California Registered Dental Assistant. Dentists are exempt from this requirement.

Review and Approval Dates

Department Chair

05/06/2020

Dean

05/06/2020

Technical Review

05/13/2020

Curriculum Committee

05/13/2020

Curriculum Committee

11/25/2020

CCCCO

MM/DD/YYYY

Control Number

CCC000452596

DOE/accreditation approval date

MM/DD/YYYY