Syllabus for DA 165
Advanced Dental Radiography

Course Information

Semester & Year: Spring 2023
Course ID & Section #: DA 165 (E4920) and DA 165 E4921
Prerequisites/ Co-requisites: Acceptance in Dental Assisting Program cohort, successful completion of fall semester courses with a 75% or better.
Instructors' Names: Hillary Reed, RDAEF, CDA (Lecture), Teresa Moore, RDA, CDA (Labs)
Instructional Aide: Amber Hunt, RDA
Day/Time: Tuesday Morning Lab (E4920): 8:30-11:40 Tuesday Lecture (E4920/E4921): 12:00-1:05 Tuesday Afternoon Lab (E4921): 1:10-4:15
Location: AT 112 (Lab)/ AT 115 (Lecture)
Number of units: 2

Instructor Contact Information

Office location: AT 101
Office hours: Tuesdays, Thursdays, Fridays by appointment
Phone number: 707-476-4250
Program Coordinator phone number: 707-476-4253
Program Coordinator email address: Hillary-reed@redwoods.edu
Absences: In the event of emergency contact 476-4250. To be eligible for alternative exams the absence must be reported ½ hour prior to the beginning of class. Excessive absences will result in Program dismissal.

Required Materials

Textbook Title: Modern Dental Assisting, 13th Edition with Workbook (ISBN: 978-0-323-462485-5)
Author: Bird and Robinson
Textbook Title: Dental Instruments, 7th Edition (ISBN: 978-0323-67243-6)
Author: Bartolomucci-Boyd
Other requirements: Dental Assisting Program Handbook, Uniform, Personal Protective Equipment, Darby Dental Kit

Course Description

A continuation of radiographic principles as applicable to dental assisting. Implementation of skill development and error analysis are emphasized in exposing both intra- and extra- oral diagnostic quality radiograph images. Clinical competency in patient care is required throughout the semester to qualify for Dental Board of California requirements for Radiation Safety Certification upon graduation.

Course Objective

1. Apply didactic content and demonstrate pre-clinical and clinical competence to meet all requirements of the Dental Board of California Radiation Safety Certification.

Course Student Learning Outcomes

1. Demonstrate competence in exposing diagnostic quality full-mouth series (consisting of periapicals and bitewing images) using both the paralleling technique and bisecting technique while applying the ALARA concepts on patients to the clinical competency level.

2. Demonstrate different radiography imaging techniques commonly used in general and specialty dentistry setting (including intra-oral and extra-oral techniques) in an efficient and pre-clinical competent manner on x-ray manikins.

3. Identify, interpret and analyze errors, demonstrating problem corrective measures on retakes when exposing intra-oral and extra-oral images.

Pre-requisites and Co-requisites

The Dental Assisting Program of Study requires the cohort of students to have successfully completed DA 153, DA 154, DA 155, and DA 156 with a 75% or better to be eligible to enroll in the spring semester cohort of courses.

Additionally, the Dental Assisting Program of Study requires the cohort of students to enroll in DA 163, DA 164, DA 165, and DA 167 concurrently. This is a Dental Board of California (DBC) and Commission on Dental Accreditation (CODA) requirement. Curriculum reiterates and combines concepts, information, and proficiencies from other courses to prepare students for the clinical setting.

Course Content

1. Film and Processing
2. Duplicating Films, Legal and Ethical Implications
3. Occlusal Technique
4. Extra-oral Imaging
5. Anatomical Landmarks
6. Periodontal patient (Vertical Bitewings and the Slob Rule)
8. Endodontic patient

Specific Didactic Course Skill Sets (Objectives)

1. Apply learned theory to patient care.
2. Demonstrate ability to follow oral and written directions.

Film and Processing

3. Describe the two primary projections used in intra-oral imaging technique and their application.
4. Describe characteristics of a good image, including quality, quantity, and intensity.
5. Discuss dental film, including speed, sizes, components of the packet, and storage.
6. Explain film processing in automatic film processors, including temperature and chemicals.
7. Describe the hazardous chemical in processing and precautions for handling and disposal.

Duplicating Films, Legal and Ethical Implications

8. Describe the processes for duplicating film.
9. Explain the HIPAA records release protocol for transferring radiographic images.

Occlusal Technique

10. Explain the purpose and technique for exposing occlusal radiographs.

Extra-oral Imaging

11. Describe the purpose and use of extra-oral radiographic imaging.
12. Discuss the advantages and disadvantages of extra-oral radiographic imaging.
13. Explain the purpose of an intensifying screen.

Periodontal patient (Vertical Bitewings and the Slob Rule)

14. Describe the reasoning for exposing vertical bitewing.
15. Describe different exposure techniques for specialty practices, including the "SLOB rule".

Endodontic patient

16. Discuss different radiographic images necessary for “Standard of Care” in the endodontic setting.
17. Describe different exposure techniques for patients with special needs.

Specific Pre-Clinical Course Skill Sets (Objectives)

Film and Processing

1. Produce prescribed diagnostic quality full-mouth (FMX) radiograph images on patients using both the paralleling and bisecting techniques in digital and film based formats.
2. Process dental x-ray films using the automated processor and quick fix technique.
3. Identify time, temperature, lighting and handling errors during film processing.
4. Discuss perimeters of quality assurance program and the eight annual tests recommended for dental equipment.
5. Distinguish between various anatomical landmarks and oral structures on radiographic images.
6. Recognize the appearance of oral lesions and pathology on radiographic images.
7. Identify existing restorations and demonstrate charting from dental x-rays.

Duplicating Films, Legal and Ethical Implications

8. Recognize the components of a records release as well as the steps and equipment utilized in duplicating traditional film.

Occlusal Technique

9. Demonstrate occlusal radiographic exposures on a manikin to the pre-clinical level.

Extra-oral Imaging

10. Demonstrate preparing equipment and positioning the patient for panoramic image.
11. Identify extra-oral imaging errors and determine corrective measures.
12. Identify anatomy present on a panoramic image.

Periodontal patient (Vertical Bitewings and the Slob Rule)

13. Demonstrate a vertical bitewing radiographic exposure on a manikin to the pre-clinical level.
14. Demonstrate "Same Lingual/Opposite Buccal" (SLOB) rule on a manikin to the pre-clinical level.

Endodontic patient

15. Demonstrate a working length radiographic exposure on a manikin to the pre-clinical level.

Specific Clinical Course Skill Sets (Objectives)

1. Demonstrate competence under direct faculty supervision, in exposing diagnostically acceptable full mouth dental images surveys (consisting of bitewing and periapical images) in 20 minutes or less using the paralleling or bisecting technique in the Dental Health Center or internship setting during the spring semester.

Handbook

All students have signed acknowledgement that they have accessed the Dental Assisting Handbook in Canvas, as well as read and agreed to detailed information provided regarding information, notifications, requirements, policies, rules and disciplinary actions. The Handbook further discusses Student Support Services, Grading Policies, Disruptive Behavior, and Emergency Procedures.

Canvas Information

College of the Redwoods Canvas System is used by students and the instructors for grade tracking, referencing handouts (files), exams/quizzes and discussion participation. Students can access Canvas at any time, using their college e-mail and password to determine their current grade in the course as well as specific scores for completed participation, assignments, or exams/ quizzes. Instructors enter grades weekly.

Students can access Canvas by going to CR Home (redwoods.edu) and then right clicking on Canvas icon on the top of the page. Once in Canvas go to courses to set your Dashboard.

Log into Canvas at https://redwoods.instructure.com
Password is your 6 digit birth date
For tech help, email its@redwoods.edu or call 707-476-4160

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact Admissions & Records to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. It does not change your legal name in our records. See the Student Information Update form.

Accessibility

College of the Redwoods is committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact your instructor or Disability Services and Programs for Students (DSPS). Students may make requests for alternative media by contacting DSPS based on their campus location: Eureka: 707-476-4280, student services building, 1st floor.

If you are taking online classes, DSPS will email approved accommodations for distance education classes to your instructor. In the case of face-to-face instruction, please present your written accommodation request to your instructor at least one week before the needed accommodation so that necessary arrangements can be made. Last minute arrangements or post-test adjustments usually cannot be accommodated.

Lecture and Lab Preparation

Students are to have read assigned chapters prior to arriving to lecture and lab. The lecture and lab activities are designed to assist the students in comprehending the content and preparing for the clinical setting.

Each week the student will participate in activities designed to reinforce the information discussed in lecture. A "Preclinical Competency Tracking Sheet" is used to determine participation and preparedness. Step-by-step procedures in the textbook include illustrations, the equipment and supplies needed icons, and the rationale behind certain steps. These step-by-step procedures are used to practice in the lab setting to prepare for RDA Skills Competency Tests required prior to performing the function in the clinical setting. The step-by-step procedures are provided in the MDA 13th Edition Workbook.

Lecture Examinations

All lecture examinations and quizzes will be administered in Canvas. Exams will consist of multiple choice, true/false, fill in the blank, short answer, and identification questions. Please refer to your course syllabus for exam times, dates, and chapters covered.

Practical Examinations

Practical examinations provide assessment for participation in the clinical setting. Students must earn a minimum of 75% on all RDA Skills Competency Tests and Instrument Identifications/Tray Set-up Exams to participate in the clinical setting. Students are allowed two attempts. The grade earned on the first attempt will be the grade recorded in Canvas. Students scoring below a 75% will require remediation, allowing for the second attempt. Remediation allows the student to score a 75% or above on the second attempt, allowing for participation in the clinical setting.

After remediation, if the student continues to score 74% or below on the second attempt the student will not be able to participate in the clinical setting due to unpreparedness and safety concerns in patient care. Likewise students requiring more than 2 remediation contracts throughout the semester will not be able to participate in the clinical setting and will be dropped from the course.

Clinical Labs

During the spring semester the following is studied in depth:

- Intra-oral examination, supplemental techniques, and extra-oral examination
- Scanning/processing procedures and darkroom protocol
- recognizing anatomical landmarks and abnormal conditions
- Identification and correction of faulty radiographs
- Placing and exposing dental images on manikins
- Radiographic records management

Prior to the end of the spring semester the students must demonstrate minimal clinical competence taking a full-mouth series consisting of 18 images, four of which are bitewing on four patients with one of the four patients used for clinical examination. All clinical radiography performance will be evaluated by the radiography instructor. Student will also be required to self-evaluate.

Clinical performance will be under faculty supervision of the radiography instructor in the clinical setting in DA 167, Advanced Dental Assistant Functions and Duties or under dentist supervision in the internship setting. The student must demonstrate exposure of a final Full Mouth Series under the direct supervision of the dental radiography faculty in a timed (20 minutes) and controlled environment for the final evaluation. The student must score 75% or above in order to successfully pass the course. The radiographic portion of the Program includes 36 didactic hours, 108 didactic hours, and over 12 hours of clinical instruction in radiography.

Additionally to accommodate CODA, two acceptable full-mouth dental images on a minimum of two Dental Health Center patients must occur prior to internship assignment.

Work Readiness Points

To be successful in the workforce, students have to develop skill sets and healthy work habits necessary for lasting employment.

Students are awarded five Pay Day Points for full participation in the activities and tasks assigned to each class session (lab and lecture), where all requirements, policies, and rules are followed as stated in the Program Handbook. Students begin the course with zero Pay Day Points. Pay Day points will be factored into the course grade.

Students not participating in activities or tasks or not following requirements, policies, and rules or who are absent will not acquire any Pay Day Points for that class session(s). This includes those that are tardy or leave early.

Additionally disciplinary action (as outlined in the Program Handbook) for the second, third, and fourth offense will affect the final course grade negatively.

Special Note

The course instructor(s) and/or the Program Coordinator have the right to at any time for any reason alter any content of the course syllabus. Course content alterations can only be done by faculty at their discretion.

Dental Assisting Program Grading Scale

The Commission on Dental Accreditation and the Dental Board of California require the lecture and lab grade to be 75% or better. The Dental Assisting Program courses are sequential and have co-requisites. Students not passing with a 75% or better in the course cannot continue.

Grade	Percentage	Definition
A	96-100	Outstanding Progress
A-	90-95	Outstanding Progress
B+	87-89	Above Average Progress
B	84-86	Above Average Progress
B-	81-83	Average Progress
C+	78-80	Satisfactory Progress
C	75-77	Lowest Acceptable Progress
D	65-74	No Progression
F	<65	Failure
W	N/A	Official Withdrawal

Overall Course Grade Calculation:

The overall course grade is weighted and determined by an average. Students cumulative scores on quizzes (15%), written exams (35%), practical (lab) exams (35%), assignments (10%), and participation (5%) are averaged together to generate a percentage determining the overall course grade.

Participation Portion:	Weighted 5% of total grade
Pay Day - Work Readiness Points 5 points per lecture and 5 points per lab	
Quiz Portion:	**Weighted 15% of total grade**
4 Quizzes (40 points each)	

Written Exam Portion:	**Weighted 35% of total grade**
1 Written Exam (150 points)	
1 Written Final Exam (350 points)	
Lab Assignment Portion:	**Weighted 10% of total grade**
1 Lab Assignment Full Mouth Series Evaluations Dexter in Traditional Film (100 points)	
1 Lab Exposure and Processing Error Lab Activity (40 points)	
3 Lab Activity Sheets (40 points each)	
5 Clinical Patient Assignment Full Mouth Series Evaluation (100 points)	
Practical (Lab) Exams:	**Weighted 35% of total grade**
6 RDA Skills Competency Tests (100 points each)	
1 Final Timed Clinical Patient Assignment Full Mouth Series Evaluation (100 points)	

Course Requirements

Course Schedule of Activities and Assignments

Week 1 - Tuesday, January 17 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 39 Dental Film and Processing

Chapter 41 Intraoral Imaging (Bisecting Technique, Errors, and Landmarks)

Week 1 - Tuesday, January 17 (Lab)

Textbook Procedure Competencies: 41.3, 39.3, 41.7, interpreting processing errors

Week 2 - Tuesday, January 24 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 39 Dental Film and Processing

Chapter 41 Intraoral Imaging (Bisecting Technique, Errors, and Landmarks)

Week 2 - Tuesday, January 24 (Lab)

Textbook Procedure Competencies: 41.3, 39.3, 41.7, worksheet activity interpreting processing errors

Week 3 - Tuesday, January 31 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 39 Duplicating Films
Chapter 40 Legal and Ethical Implications
Chapter 41 Intraoral Imaging

Week 3 - Tuesday, January 31 (Lab)

Textbook Procedure Competencies: 39.1, Evaluation of Clinical/ Internship FMX

LAB ASSIGNMENTS DUE – Film Full Mouth Series on Dexter in Traditional Film
– 3 Lab Activity Sheets
– 3 Lab Activity Exposure and Processing Error Sheet

Week 4 - Tuesday, February 7 (Lecture) **QUIZ #1 (Chapters 39, 40, 41)**

Textbook reading assignment in preparation for lecture class:

Chapter 41 Occlusal Technique, Patients with Special Dental Needs (Edentulous/ Pediatric)

Week 4 - Tuesday, February 7 (Lab)

Textbook Procedure Competencies: 41.6**,** Evaluation of Clinical/ Internship FMX

RDA SKILLS COMPETENCY TEST #1 – Automatic Film Processing and Interpretation of Errors

Week 5 - Tuesday, February 14 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 41 Occlusal Technique, Patients with Special Dental Needs (Edentulous/ Pediatric)

Week 5 - Tuesday, February 14 (Lab)

Textbook Procedure Competencies: 42.1, 42.2, 42.3, Evaluation of Clinical/ Internship FMX

CLINICAL PATIENT ASSIGNMENT DUE -Patient FMX #1 (Clinical/Internship Exposures)
CLINICAL PATIENT ASSIGNMENT DUE -Patient FMX #2 (Clinical/Internship Exposures)

Week 6 - Tuesday, February 21 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 42 Extra Oral Imaging
Chapter 41 Recognizing Anatomical Landmarks

Week 6 - Tuesday, February 21 (Lab)

Textbook Procedure Competencies: 42.1, 42.2, 42.3, Evaluation of Clinical/ Internship FMX

RDA SKILLS COMPETENCY TEST #2 –Exposing Occlusal Radiographs on a Pediatric Patient

Week 7 - Tuesday, February 28 (Lecture) **QUIZ #2 (Chapters 41, 42)**

Textbook reading assignment in preparation for lecture class:

Chapter 42 Extra Oral Imaging
Chapter 41 Recognizing Anatomical Landmarks

Week 7 - Tuesday, February 28 (Lab)

Textbook Procedure Competencies: Interpreting Panoramic Images and Errors,
Evaluation of Clinical/ Internship FMX

RDA SKILLS COMPETENCY TEST #3 – Preparing Equipment and Patient for Panoramic Imaging

Week 8 - Tuesday, March 7 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 42 Extra Oral Imaging

Chapter 41 Recognizing Anatomical Landmarks

Week 8 - Tuesday, March 7 (Lab)

Textbook Procedure Competencies: Interpreting Panoramic Images and Errors, Evaluation of Clinical/ Internship FMX

RDA SKILLS COMPETENCY TEST #4 – Interpreting Panoramic Images and Errors

Week 9 – Monday, March 13th – Friday, March 17th

Spring Break

Week 10 - Tuesday, March 21 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 41 Periodontal Patient- Vertical Bitewings

Week 10 - Tuesday, March 21 (Lab)

Textbook Procedure Competencies: Vertical BWX, Evaluation of Clinical/ Internship FMX

CLINICAL PATIENT ASSIGNMENT DUE -Patient FMX #3 (Clinical/Internship Exposures)

CLINICAL PATIENT ASSIGNMENT DUE -Patient FMX #4 (Clinical/Internship Exposures)

Week 11 - Tuesday, March 28 (Lecture) **EXAM #1 (Chapters 39, 40, 41, 42)**

Textbook reading assignment in preparation for lecture class:

Chapter 41 Periodontal Patient- Vertical Bitewings

Week 11 - Tuesday, March 28 (Lab)

Textbook Procedure Competencies: Vertical Bitewings, Evaluation of Clinical/ Internship FMX

Week 12 - Tuesday, April 4 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapter 41 Endodontic Patient

Week 12 - Tuesday, April 4 (Lab)

Textbook Procedure Competencies: 41.3 w/ Dental Dam and Files, Practice Dental Dam Placement

RDA SKILLS COMPETENCY TEST #5 – Exposing, Scanning and Mounting Vertical Bitewings

Week 13 - Tuesday, April 11 (Lecture) **QUIZ #3 (Chapter 41)**

Textbook reading assignment in preparation for lecture class:

Chapters 38, 39, 40, 41, 42, Review for Radiation Health and Safety Exam

Week 13 - Tuesday, April 11 (Lab)

Textbook Procedure Competencies: Evaluation of Clinical/ Internship FMX and Review Activities

RDA SKILLS COMPETENCY TEST #6- Expose Endodontic Radiograph with Dental Dam

Week 14 - Tuesday, April 18 (Lecture)

Textbook reading assignment in preparation for lecture class:

Chapters 38, 39, 40, 41, 42, Review for Radiation Health and Safety Exam

Week 14 - Tuesday, April 18 (Lab)

Textbook Procedure Competencies: Evaluation of Clinical/ Internship FMX and Review Activities

CLINICAL PATIENT ASSIGNMENT DUE -Patient FMX #5 (Clinical/Internship Exposures)

Week 15 - Tuesday, April 25 (Lecture) **QUIZ #4 (Cumulative- Error Corrections)**

Textbook reading assignment in preparation for lecture class:

Chapters 38, 39, 40, 41, 42, Review for Radiation Health and Safety Exam

Week 15 - Tuesday, April 25 (Lab)

FINAL TIMED CLINICAL PATIENT ASSIGNMENT FMX (20 MINUTES OR LESS)

Week 16 - Tuesday, May 2 (Lecture/ Lab)

FINAL WRITTEN EXAM - RADIOGRAPHY

Week 17- Tuesday, May 9 (Lecture/ Lab)

RDA Application/ CDA Application