

El Paso Community College Syllabus

Part II

Official Course Description

SUBJECT AREA	Dental Hygiene								
COURSE RUBRIC AND NUMBER	DHYG 1304								
COURSE TITLE	Dental Radiology								
COURSE CREDIT HOURS	<table style="margin: auto; border-collapse: collapse;"> <tr> <td style="text-align: center; border-bottom: 1px solid black;">3</td> <td style="text-align: center; border-bottom: 1px solid black;">2</td> <td style="text-align: center; border-bottom: 1px solid black;">:</td> <td style="text-align: center; border-bottom: 1px solid black;">4</td> </tr> <tr> <td style="text-align: center;">Credits</td> <td style="text-align: center;">Lec</td> <td></td> <td style="text-align: center;">Lab</td> </tr> </table>	3	2	:	4	Credits	Lec		Lab
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Credits	Lec		Lab						

I. Catalog Description

Studies the fundamentals of oral radiography, including techniques, interpretation, quality assurance, and ethics. A grade of "C" or better is required in this course to take the next course. **Prerequisites: BIOL 2401 and BIOL 2402 and CHEM 1306 and 1106. Corequisites: DHYG 1103 and DHYG 1201 and DHYG 1219 and DHYG 1239 and DHYG 1431. (2:4). Lab fee. Professional Practice Insurance required. Dental Hygiene Discipline.**

II. Course Objectives

Theory

The theory section of this syllabus corresponds to the parts and chapters found in the text.

Part I: History and Radiation Basics

A. Unit I: Introduction and History of Dental Radiography

1. State who discovered x-rays and the date.
2. Name the pioneers of radiography and identify their contributions.
3. Discuss the history of dental x-ray equipment.
4. Identify the two technique used in making dental radiographs.
5. List the uses of dental radiographs.
6. Define all related terminology.

B. Unit 2: Characteristics of Radiation

1. Draw and label a typical atom.
2. Describe the process of ionization.
3. Explain radioactivity.
4. Discuss the difference between particulate radiation and electromagnetic radiation and give two examples of each.
5. List the properties of electromagnetic radiation.
6. Compare x-ray wavelength to its penetrating power.
7. List the properties of x-rays.
8. Explain how x-rays are produced.
9. List and describe the possible interactions of dental x-rays with matter.
10. Define the terms used to measure x-radiation
11. Explain background radiation.
12. Define all related terminology.

C. Unit 3: The Dental x-ray machine components and functions.

1. Identify the major components of an x-ray machine.

2. List the four controls on most dental x-ray machine.
 3. List the components of the tube head.
 4. Draw and label a typical dental x-ray tube.
 5. Discuss the principles of x-ray tube operation.
 6. Explain the function of the mA, kVp, and timer control devices.
 7. Name the three transformers, describe their functions, and state their locations.
 8. Identify in sequence the steps that must be followed in operating the dental x-ray machine.
 9. Define all related terminology
- D. Unit 4: Producing Quality Radiographs
1. Identify the basic requirements of an acceptable diagnostic radiograph.
 2. Differentiate between radiolucent and radiopaque areas on a dental radiograph and give an example of each.
 3. Describe radiographic density and contrast.
 4. Summarize the factors affecting the radiographic image.
 5. Differentiate between subject contrast and film contrast.
 6. List the rules of casting a shadow image.
 7. List the factors that influence magnification and distortion.
 8. Describe how mA, kVp, and exposure time affect film density.
 7. Discuss how kVp affects contrast.
 8. Differentiate between short-scale contrast and long-scale distances.
 9. Explain target-surface, object-film, and target-film distances.
 10. Explain the inverse square law and give two examples where it is used.
 11. Define all related terminology.

Part II: Biological Effects of Radiation and Radiation Protection

- E. Unit 5: Effects of Radiation Exposure
1. Compare the theories of biological damage and the possible effect of radiation on somatic and genetic cells.
 2. Identify the body cells in the order of their radiosensitivity.
 3. Identify the factors that determine radiation injuries.
 4. List the sequence of events that may follow exposure to radiation.
 5. Identify the three areas in the head and neck that are most affected by radiation.
 6. List the possible short and long-term effects of irradiation.
 7. Discuss the risk versus benefit of dental radiographs.
 8. Identify the effects of oral radiation therapy.
 9. Discuss all related terminology.
- F. Unit 6: Radiation Protection
1. Explain the ALARA concept.
 2. Summarize the radiation protection methods for the patient.
 3. Summarize the radiation protection methods for the operator.
 4. Describe a collimator, discuss its use, and state the recommended diameter of the beam at the patient's skin.
 5. Describe a filter, discuss its use, and state filtration requirements above and below 70 kVp.
 6. Explain inherent, added, and total filtration.
 7. Discuss the use of the lead apron and thyroid collar.
 8. Discuss the importance of film handling and processing.

9. Describe personnel monitoring devices used to detect radiation.
10. Discuss maximum permissible dose (MPD) and state the MPD for radiation workers and for the general public.
11. Define all related terminology

Part III: Dental X-ray Film and Processing Techniques

G. Units 7: Dental X-ray Films

1. Discuss the composition of dental x-ray film.
2. Describe latent image formation.
3. Differentiate between screen and non-screen films.
4. Identify the contents in dental x-ray film packets.
5. Identify and compare the various intraoral films according to size, customary usage and film speed.
6. Differentiate between intraoral and extraoral films.
7. Identify the parts and intended use of the extraoral cassette.
8. Describe duplicating film.
9. Discuss correct methods of film storage and protection.
10. Define all related terminology.

H. Unit 8: Dental x-ray film processing

1. Explain how a latent image becomes a visible image.
2. List in sequence the steps in processing dental films.
3. List and describe the four (4) chemicals in the developer and fixing solutions and explain the function of each ingredient.
4. List the necessary equipment items in the darkroom for film processing.
5. Discuss safelights and safelight filters.
6. List and discuss the step-by-step procedures for manual film processing.
7. Discuss rapid film processing procedures.
8. Discuss the advantages and disadvantages of automatic film processing.
9. Discuss the disposal of radiographic processing chemicals and film waste.
10. Define all related terminology.

I. Unit 9: Identifying and Correcting Faulty Radiographs

1. Identify the types of radiographic errors caused by faulty exposure techniques.
2. Identify the types of radiographic errors caused by incorrect film positioning and angulation of the central ray.
3. Identify the types of radiographic errors caused by faulty processing techniques.
4. Identify the types of radiographic errors caused by chemical contamination.
5. Identify the types of radiographic errors caused by film handling.
6. Identify problems caused by outdated film.
7. Identify problems caused by faulty safelight conditions.
8. Define all related terminology.

J. Unit 10: Quality assurance in dental radiography

1. Differentiate between quality assurance and quality control.
2. List the four objectives of quality control tests.
3. Discuss the use of a step wedge.
4. Describe how to test for light leaks in the darkroom.
5. Describe the safelight test.

6. Describe two daily tests for the automatic processor.
7. Discuss the test for developer solution strength using a step wedge device.
8. Discuss three causes of light radiographs and correction measures.
9. Discuss three causes of dark radiographs and correction measures.
10. List five problems with film surface marks, their cause and correction.
11. Describe who benefits from quality assurance programs.
12. Define all related terminology.

Part IV: Radiographic Anatomy and Mounting Radiographs

K. Unit 11: Identification of anatomical landmarks for mounting radiographs

1. Why is it important to recognize and identify normal anatomical landmarks of the face and head.
2. Recognize and identify the facial and cranial bones on a radiograph.
3. Name all of the anatomical landmarks of the maxilla and mandible found on a radiograph.
4. Differentiate between the terms radiopaque and radiolucent.
5. Differentiate between cortical and cancellous bone.
6. Recognize and describe the radiographic appearance of all structures of the teeth and the alveolus.
7. Name and identify all landmarks or structures normally seen on radiographs of the maxillary and mandibular tooth areas.
8. Define all related terminology.

L. Unit 12. Mounting and Viewing Dental Radiographs

1. List the five (5) advantages of mounting radiographs.
2. Discuss the use and importance of the identification dot.
3. List the recommended order for mounting radiographs
4. List and describe the set by step procedures for mounting radiographs.
5. List five (5) items to be carefully checked after the radiographs are mounted.
6. Describe the optimal conditions for viewing radiographs.
7. Describe how to block our excess light during film viewing.
8. Define all related terminology.

Part V: Intraoral Techniques

M. Unit 13: Intraoral radiographic procedures

1. Identify the three (3) intraoral x-ray examinations.
2. List the five (5) rules of shadow casting.
3. Discuss the principles of the paralleling technique.
4. Discuss the principles of the bisecting technique.
5. Compare the paralleling and bisecting technique.
6. Locate the points of entry on the face.
7. Explain the proper patient seating position.
8. Explain horizontal and vertical angulation.
9. Define all related terminology.

N. Unit 14: The Periapical Examination

1. Select the type and number of films required to make a complete periapical survey.
2. Identify and be able to assemble and position film holders for the paralleling and bisecting techniques.
3. Discuss film retention for paralleling procedures.

4. State the four (4) rules for using the XCP instruments.
 5. Describe patient preparation for the paralleling technique.
 6. State the method of positioning the film packet for maxillary and mandibular periapical exposures when using the paralleling technique.
 7. Discuss film retention for bisecting procedures.
 8. State the method of positioning the film packet for maxillary and mandibular periapical exposures when using the bisecting technique.
 9. Differentiate between conventional periapical film placement and endodontic film placement techniques.
 10. Define all related terminology.
- O. Unit 15: The Bitewing Examination
1. State the purpose of the bitewing examination.
 2. Compare the difference between periapical and bitewing radiographs.
 3. List the four (4) sizes of film that can be used for bitewing surveys.
 4. Identify the size and number of films required to make an adult bitewing survey.
 5. Explain horizontal angulation.
 6. Explain positive and negative vertical angulation.
 7. State the recommended vertical angulation for bitewing exposures.
 8. Compare the methods of holding the bitewing film in position.
 9. Describe the film placements for the posterior bitewing examination.
 10. Describe the film placements for the anterior bitewing examination.
 11. Define all rated terminology.
- P. Unit 16: The Occlusal Examination
1. State the purpose of the occlusal examination.
 2. List the reasons for making occlusal radiographs.
 3. Discuss the technical considerations for the occlusal examination.
 4. Compare the topographical with the cross-sectional technique.
 5. State the sequence of steps for the maxillary and mandibular topographical surveys.
 6. State the sequence of steps for the maxillary and mandibular cross-sectional surveys.
 7. Define all related terminology.
- Q. Unit 17: Radiographic Techniques for Children
1. Discuss the importance of making radiographic examinations on children.
 2. Identify the factors that determine when radiographs on children should be made.
 3. Discuss the suggested techniques for pediatric radiography.
 4. Discuss the film requirements for the pediatric survey.
 5. Explain the bitewing and periapical procedures for exposing radiographs on children.
 6. Define all related terminology.
- R. Unit 18: Radiographic Techniques for the Edentulous Patient
1. Explain the importance of making a radiographic survey of edentulous areas.
 2. Identify the film requirements for an edentulous survey.
 3. Name and describe the three techniques for radiographing edentulous patients.
 4. Define all related terminology.
- S. Unit 19: Digital Radiography
1. Differentiate a digital image from a radiograph
 2. Discuss the fundamental concepts of digital radiography

3. Discuss the purpose and use of digital radiography.
4. Describe the equipment used in digital radiography.
5. State and describe the three (3) types of digital imaging.
6. List and discuss the advantages and disadvantages of digital radiography.
7. Define all rated terminology.

Part VI: Extraoral Techniques

T. Unit 20: Extraoral Radiography

1. Describe the purpose and use of extraoral radiographs.
2. Identify the types of film used in extraoral radiography.
3. Give three reasons for making extraoral exposures.
4. Identify the types of projections that can be performed extraorally.
5. State the purpose and describe the procedure for each extraoral projection.
6. Define all related terminology.

U. Unit 21: Panoramic Radiography

1. State the purpose and use of panoramic radiography.
2. Differentiate between a conventional and a panoramic x-ray machine.
3. Identify the main factor that determines the width of the focal trough.
4. Identify the major factors that affect the geometry of the image.
5. Identify the planes used to position the head correctly.
6. Identify in sequence the basic steps in operating a panoramic x-ray unit.
7. Compare the advantages and disadvantages of panoramic versus intraoral radiographic surveys.
8. Identify five (5) major head-positioning errors that result in faulty panoramic radiographs.
9. List and identify the anatomic landmarks of the maxilla and surrounding tissues as viewed on a panoramic radiograph.
10. List and identify the anatomic landmarks of the mandible and surrounding tissues as viewed on a panoramic radiograph.
11. List and identify four (4) soft tissue images as viewed on a panoramic radiograph.
12. List and identify three (3) air space images as viewed on a panoramic radiograph.
13. Define all related terminology.

Part VII: Dental Radiographer Fundamentals

V. Unit 22: Infection Control

This unit is a review of basic infection control protocol with emphasis on infection control protocols found in radiology.

W. Unit 23: Patient Relations and Education

1. Explain the necessity for patient education in radiology.
2. Identify the benefits that the patient derives from preventive radiation procedures
3. Describe three (3) methods by which the patient can be educated to appreciate the value of dental radiography.
4. Identify the goals of the dental radiographer.
5. Define all related terminology.

X. Unit 24: Managing Patients with Special Needs

1. List all areas of the oral cavity that are most likely to initiate the gag reflex.
2. List the two (2) stimuli that commonly initiate the gag reflex.
3. Describe seven (7) methods to reduce psychogenic stimuli to control gag reflex.
4. Describe four (4) methods to reduce tactile stimuli to control the gag reflex.

5. Describe the procedures for managing the wheel-chair bound patient.
6. Discuss the procedure for managing visually and hearing impaired patients.
7. Discuss the procedures for managing the apprehensive patient.
8. Discuss the procedures for film placement in patients with maxillary and mandibular tori.
9. Discuss the procedures for film placement in patients with low palatal vaults.
10. Define all related terminology.

Y. Unit 25: Regulations and Legal Aspects

1. Discuss the federal and state regulations concerning the use of dental x-rays equipment.
2. Describe licensure requirements for exposing dental radiographs.
3. Discuss risk management.
4. Discuss the relationship of the patient and the radiographer.
5. Discuss informed consent.
6. List the items that must be documented in the patient's record.
7. Explain what should be said to patients who refuse radiographs.

Part VIII: Radiographic Interpretation

Z. Chapter 26: Introduction to Radiographic Interpretation

1. Differentiate between preliminary interpretation and diagnosis of the radiographs.
2. Identify all radiopaque and radiolucent appearing restorative materials
3. List at least four (4) types of cysts.
4. Describe the appearance of at least eight (8) anomalies.
5. Differentiate between normal and pathological resorption of bone structures and teeth.
6. Differentiate between calcifications and ossifications.
7. Describe the radiographic appearance of odontogenic tumors.
8. List the five types of dental caries and their radiographic appearance.
9. Describe the radiographic appearance of dental injuries.
10. Identify two methods used to localize objects in the jaws by applying the buccal-object rule (SLOB Rule)
11. Define all related terminology.

AA. Unit 27: Periodontal Disease

1. Describe the radiographic appearance of healthy periodontium.
2. Describe the radiographic appearance of periodontal disease.
3. List the four (4) ADA Case Types and describe their radiographic appearance.
4. Discuss the radiographic examination for periodontal disease.
5. Describe the type of radiographs used to interpret periodontal disease and the preferred technique.
6. Describe the limitations of the radiograph in the detection of periodontal disease.
7. Define all related terminology.

BB. Unit 28: Dental Caries

1. Explain why caries appear radiolucent on the radiograph.
2. Discuss both the clinical examination and the radiographic examination for the detection of dental caries.
3. List the five (5) locations of dental caries and discuss their radiographic appearance.
4. List three (3) conditions that resemble dental caries.
5. Define all related terminology.

Laboratory

The laboratory portion of this course is designed to enhance the theory portion. Unit objectives, in the laboratory portion, match the objectives found in the theory portion, however may or may not be addressed the same day as the lecture.

- A. Unit I: Introduction and History of Dental Radiography
No lab portion
- B. Unit 2: Characteristics of Radiation
No lab portion
- C. Unit 3: The Dental x-ray machine components and functions.
 - 1. Demonstrate the function of the mA, kVp, and timer control devices.
 - 2. Demonstrate the sequence the steps that must be followed in operating the dental x-ray machine.
- D. Unit 4: Producing Quality Radiographs
 - 1. Identify the basic requirements of an acceptable diagnostic radiograph.
 - 2. Differentiate between radiolucent and radiopaque areas on a dental radiograph and give an example of each.
 - 3. Demonstrate and identify radiographic density and contrast.
 - 4. Demonstrate how mA, kVp, and exposure time affect film density.

Part II: Biological Effects of Radiation and Radiation Protection

- E. Unit 5: Effects of Radiation Exposure
No lab portion
- F. Unit 6: Radiation Protection
 - 1. Demonstrate radiation protection methods for the patient.
 - 2. Demonstrate radiation protection methods for the operator.
 - 3. Demonstrate the use of the lead apron and thyroid collar.
 - 4. Demonstrate of film handling and processing.

Part III: Dental X-ray Film and Processing Techniques

- G. Units 7: Dental X-ray Films
 - 1. Identify the contents in dental x-ray film packets.
 - 2. Identify and compare the various intraoral films according to size, customary usage and film speed.
 - 3. Differentiate and demonstrate the use of intraoral and extraoral films.
 - 4. Identify and demonstrate use of the extraoral cassette.
 - 5. Demonstrate the use of duplicating film.
 - 6. Demonstrate correct methods of film storage and protection.
- H. Unit 8: Dental x-ray film processing
 - 1. Demonstrate the sequence of steps in processing dental films.
 - 2. Discuss and demonstrate the equipment used in the darkroom for film processing.
 - 3. Identify and discuss safelights and safelight filters.
 - 4. Demonstrate the step-by-step procedures for manual film processing.
 - 5. Demonstrate rapid film processing procedures.
 - 6. Demonstrate the step-by-step procedures of automatic film processing.
 - 7. Discuss the disposal of radiographic processing chemicals and film waste.
- I. Unit 9: Identifying and Correcting Faulty Radiographs
 - 1. Identify the types of radiographic errors caused by faulty exposure techniques.

2. Identify the types of radiographic errors caused by incorrect film positioning and angulation of the central ray.
 3. Identify the types of radiographic errors caused by faulty processing techniques.
 4. Identify the types of radiographic errors caused by chemical contamination.
 5. Identify the types of radiographic errors caused by film handling.
 6. Identify problems caused by outdated film.
 7. Identify problems caused by faulty safelight conditions.
- J. Unit 10: Quality assurance in dental radiography
1. Differentiate between quality assurance and quality control.
 2. Demonstrate use of a step wedge.
 4. Demonstrate the procedure of testing for light leaks in the darkroom.
 5. Demonstrate the procedure of testing the safelight.
 6. Demonstrate the two daily tests for the automatic processor.
 7. Demonstrate the test for developer solution strength using a step wedge device.

Part IV: Radiographic Anatomy and Mounting Radiographs

- K. Unit 11: Identification of anatomical landmarks for mounting radiographs
1. Recognize and identify normal anatomical landmarks of the face and head.
 2. Recognize and identify the facial and cranial bones on a radiograph.
 3. Differentiate between the terms radiopaque and radiolucent.
 5. Differentiate between cortical and cancellous bone.
 6. Identify the radiographic appearance of all structures of the teeth and the alveolus.
 7. Identify all landmarks or structures normally seen on radiographs of the maxillary and mandibular tooth areas.
- L. Unit 12. Mounting and Viewing Dental Radiographs
1. Demonstrate recommended order for mounting radiographs
 2. Demonstrate mounting radiographs.

Part V: Intraoral Techniques

- M. Unit 13: Intraoral radiographic procedures
1. Demonstrate the three types of intraoral x-ray examinations.
 2. Demonstrate the principles of the paralleling technique.
 3. Demonstrate the principles of the bisecting technique.
 5. Compare the paralleling and bisecting technique.
 6. Locate the points of entry on the face.
 7. Demonstrate the proper patient seating position.
 8. Demonstrate horizontal and vertical angulation.
- N. Unit 14: The Periapical Examination
1. Select the type and number of films required to make a complete periapical survey.
 2. Identify and be able to assemble and position film holders for the paralleling and bisecting techniques.
 3. Demonstrate film retention for paralleling procedures.
 4. Demonstrate patient preparation for the paralleling technique.
 5. Demonstrate film retention for bisecting procedures.
 6. Differentiate between conventional periapical film placement and endodontic film placement techniques.
- O. Unit 15: The Bitewing Examination

1. State the purpose of the bitewing examination.
 2. Compare the difference between periapical and bitewing radiographs.
 3. Identify the four (4) sizes of film that can be used for bitewing surveys.
 4. Identify the size and number of films required to make an adult bitewing survey.
 5. Demonstrate horizontal angulation.
 6. Demonstrate positive and negative vertical angulation.
 7. Demonstrate the recommended vertical angulation for bitewing exposures.
 8. Compare the methods of holding the bitewing film in position.
 9. Demonstrate the film placements for the posterior bitewing examination.
 10. Demonstrate the film placements for the anterior bitewing examination.
- P. Unit 16: The Occlusal Examination
1. State the purpose of the occlusal examination.
 2. List the reasons for making occlusal radiographs.
 3. Demonstrate the occlusal examination.
 4. Compare the topographical with the cross-sectional technique.
 5. Demonstrate of steps for the maxillary and mandibular topographical surveys.
 6. Demonstrate of steps for the maxillary and mandibular cross-sectional surveys.
- Q. Unit 17: Radiographic Techniques for Children
1. Demonstrate taking radiographic examinations on children.
 2. Determine when radiographs on children should be made.
 3. Demonstrate techniques for pediatric radiography.
 4. Identify the film requirements for the pediatric survey.
 5. Demonstrate bitewing and periapical procedures for exposing radiographs on children.
- R. Unit 18: Radiographic Techniques for the Edentulous Patient
1. Explain the importance of making a radiographic survey of edentulous areas.
 2. Identify the film requirements for an edentulous survey.
- S. Unit 19: Digital Radiography
No lab portion
- Part VI: Extraoral Techniques
- T. Unit 20: Extraoral Radiography
1. Describe the purpose and use of extraoral radiographs.
 2. Identify the types of film used in extraoral radiography.
- U. Unit 21: Panoramic Radiography
1. Differentiate between a conventional and a panoramic x-ray machine.
 2. Demonstrate the planes used to position the head correctly.
 3. Demonstrate the basic steps in operating a panoramic x-ray unit.
 4. Discuss and compare the advantages and disadvantages of panoramic versus intraoral radiographic surveys.
 5. Identify five major head-positioning errors that result in faulty panoramic radiographs.
 6. Identify the anatomic landmarks of the maxilla and surrounding tissues as viewed on a panoramic radiograph.
 7. Identify the anatomic landmarks of the mandible and surrounding tissues as viewed on a panoramic radiograph.
 8. Identify four soft tissue images as viewed on a panoramic radiograph.

9. Identify three air space images as viewed on a panoramic radiograph.

Part VII: Dental Radiographer Fundamentals

V. Unit 22: Infection Control

Demonstrate infection control protocol at all times in radiology.

W. Unit 23: Patient Relations and Education

1. Demonstrate patient education in radiology.
2. Discuss the benefits that the patient derives from preventive radiation procedures with patients.

X. Unit 24: Managing Patients with Special Needs

1. List all areas of the oral cavity that are most likely to initiate the gag reflex.
2. List the two (2) stimuli that commonly initiate the gag reflex.
3. Demonstrate procedures for film placement in patients with maxillary and mandibular tori.
4. Demonstrate procedures for film placement in patients with low palatal vaults.

Y. Unit 25: Regulations and Legal Aspects

1. Demonstrate the use of all items that must be documented in the patient's record to include, but not inclusive to: informed consent, medical history, etc.

Part VIII: Radiographic Interpretation

Z. Chapter 26: Introduction to Radiographic Interpretation

1. Differentiate between preliminary interpretation and diagnosis of the radiographs.
2. Identify all radiopaque and radiolucent appearing restorative materials
3. Describe the appearance of at least eight (8) anomalies.
4. List the five types of dental caries and their radiographic appearance.
5. Describe the radiographic appearance of dental injuries.
6. Demonstrate methods used to localize objects in the jaws by applying the buccal-object rule (SLOB Rule)

AA. Unit 27: Periodontal Disease

1. Describe the radiographic appearance of healthy periodontium.
2. Describe the radiographic appearance of periodontal disease.
3. Discuss the radiographic examination for periodontal disease.
5. Describe the type of radiographs used to interpret periodontal disease and the preferred technique.
6. Describe the limitations of the radiograph in the detection of periodontal disease.

BB. Unit 28: Dental Caries

1. Explain why caries appear radiolucent on the radiograph.
2. Discuss both the clinical examination and the radiographic examination for the detection of dental caries.
3. List the five (5) locations of dental caries and discuss their radiographic appearance.
4. List three (3) conditions that resemble dental caries.

III. THECB Learning Outcomes (WECM)

1. Identify the histological and embryological development of the orofacial structures.
2. Locate the major structures of the head and neck.
3. Compare and contrast various teeth including the crown and root morphology.

IV. Evaluation

A. Lecture portion of the course

1. Examinations – a total of three examinations will be given during the semester plus a final. The examinations given during the semester will cover only the lecture units presented since the preceding examination. The final examination will be a comprehensive examination over the entire lecture course. However, should the instructor find it necessary to administer unannounced “pop” quizzes the points will be added to the total.
2. During the course individual and group assignments will be assigned these will be graded on a pass/fail basis. If a student receives an F for a project she/he will need to redo and resubmit the project. Failure to submit a project or obtain a passing grade on a resubmitted project by the end of the semester (defined as the day of the final exam) will result in the student receiving an F for the course.

B. Laboratory portion of this course

1. Written and practical laboratory exercises will be averaged into the overall laboratory grade. Radiographic surveys will be worth 40% of the laboratory grade.
Refer to the El Paso Community College Dental Radiology Handbook for specific information regarding technique, interpretation and survey grading.
2. The final grade for the course will be an average of the lecture portion and the laboratory portion of the course. However, the student must pass the lecture portion and the laboratory portion of the course with a minimum score of 75% or they will receive an “F” for the entire course.
 - a. Lecture portion of the course final average 60%
 - b. Laboratory portion of the course final average 40%
3. Grading Scale
A = 93 - 100
B = 83 - 92
C = 75 - 82
D = 70 - 74
F = 74 and below
NOTE TO THE STUDENTS: The minimum acceptable numerical number is a 75 as determined by the program’s promotion and graduation policies. If the final numerical number for the course is .5 or higher the number will be rounded up to the next number. A grade that is .5 or greater will be rounded off to highest grade.

V. Disability Statement (Americans with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

VII. Dental Hygiene Entry-Level Competencies

Core Competencies

- C1. Apply ethical reasoning to dental hygiene
- C2. Comply with state and federal laws governing the practice of dentistry and dental hygiene
- C3. Use critical thinking skills and comprehensive problem-solving to identify oral health care strategies that promote patient health and wellness.
- C4. Use evidence-based decision making to evaluate emerging technology and treatment modalities to integrate into patient dental hygiene plans to achieve high-quality, cost-effective care.
- C5. Assume responsibility for professional actions and care based on accepted scientific theories, research, and the accepted standard of care.
- C9. Apply quality assurance mechanism to ensure continuous commitment to accepted standards of care.
- C10. Communicate effectively with diverse individuals and groups, serving all persons without discrimination by acknowledging and appreciating diversity.
- C11. Record accurate, consistent, and complete documentation of oral health services provided.
- C12. Initiate a collaborative approach with all patients when developing individualized care plans that are specialized, comprehensive, culturally sensitive, and acceptable to all parties involved in care planning.
- C13. Initiate consultations and collaborations with all relevant health care providers to facilitate optimal treatment.
- C14. Manage medical emergencies by using professional judgment, providing life support, and utilizing required CPR and any specialized training and knowledge.

Patient Care (PC)

- PC2. Recognize predisposing and etiologic risk factors that require intervention to prevent disease.
- PC3. Recognize the relationships among systemic disease, medications, and oral health that impact overall patient care and treatment outcomes.
- PC4. Identify patients at risk for medical emergency, and manage the patient care in a manner that prevents an emergency.
- PC5. Use patient assessment data, diagnostic technologies, and critical decision making skills to determine a dental hygiene diagnosis, a component of the dental diagnosis, to reach conclusions about the patient's dental hygiene care needs.
- PC8. Make referrals to professional colleagues and other health care professionals as indicated in the patient care plan.