DENTAL RADIOGRAPHY PROCEDURES

Program Policy
The MCC Dental Studies program operates under the ALARA principle (As Low As Reasonable Achievable). All operating parameters employed shall result in the lowest possible radiation dose to the patient and still produce desired diagnostic information.

Pregnant Students: According to New York State Sanitary Code, Chapter 1 - Part 16:53, dated April 18, 2001, the student/employee has the right to decide whether to declare her pregnancy or not. This written declaration must be voluntary and can be withdrawn at any time.

Radiation safety and infection control is the responsibility of all individuals involved in taking dental x-rays. This includes faculty, students, clinical staff, and individuals assigned the responsibility for proper use and maintenance of radiation equipment and supplies.

Radiography Protocol
- Students must observe all the infection control procedures according to clinic policy. (Refer to Infection Control section)
- Operator must be behind protective barrier during exposure.
- Assess authorization for radiographs:
  - prescription from patient's dentist for CRS
  - written request from supervising dentist for CRS(no pt. DDS) or BW's.
- Complete disposition form. Number of retakes must be recorded when the instructor signs the disposition slip. (See sample form on next page)
- Complete and/or review medical/dental health histories.
- Place a lead apron and thyroid collar on all patients for intraoral exposures. The lead equivalent of the apron must be at least 0.25 mm.
- Lead apron only for panoramic exposure.
- Expose x-rays utilizing appropriate film-holding devices and double-film. If patient needs CRS and BWX, same student will take these radiographs.

  NOTE: A dental assisting student may expose a patient to ionizing radiation ONLY under direct supervision of a dental hygiene instructor or supervising dentist.

- Process x-rays.
- Follow infection control procedures.
- Instructor determines retakes and completes retake slip.
- Retakes must be completed under direct supervision of dental hygiene instructor or supervising dentist.

Maximum number of retakes is:
  - CRS (14 exposures) - 4 retakes
  - BWX (set of 4 exposures) - 1 retake

- Complete the disposition form. (See sample on next page). The number of retakes must be recorded when the instructor signs the disposition form.
SAMPLE DISPOSITION FORM

Radiograph Disposition: SAMPLE

ATTENTION: All information should be completed before submitting radiographs.

PLEASE NOTE: Do not hand in radiographs until retakes are done, if needed.

Name of Patient: John Doe

Date: 3/14/00 No. exp.: BXW 4 PA 14 PAN 1

Student: BWX: Student’s Name

PA’s: Student’s Name

PAN: Student’s Name

Paid or Reason for Non-Payment: Coupon

Disposition of X-rays: Circle one: Gave to Pt – date or Mail to Pt

Mail to DDS

Name & Address

Dr. David Lawrence

1000 East Henrietta Road

Rochester, NY 14623

RADIOGRAPH RETAKES: PAN: __________________________

RIGHT

Molar Bicuspis Cuspid Central Cuspid Bicuspis Molar

LEFT

Molar Bicuspis Bicuspis Molar

Instructor signature: 2 retakes N. Rivaldo

DO NOT SIGN UNTIL COMPLETED

9-98
Important Notes:

- All x-rays must be paid for with the exception of senior citizen, Medicaid or use of coupon.
- The disposition slip MUST have the full name, address with zip code of either the dentist or the patient. (It will be the responsibility of the secretary to mail out the radiographs to the dentist or the patient, and record it in patient's record. One set must be mailed.)
- A referral letter must accompany all radiographs.
- If one set of radiographs have to be released to the patient the same day, they are taken or given to the patient at the dental hygiene appointment, follow these important instructions:
  - They MUST be released through the secretary or instructor
  - All radiographs will be removed from the mount and placed in envelope. Label the envelope with patient's name, date and type of radiographs. The secretary will enclose the cover letter and give it to the patient.

  Important - This should be recorded in the disposition form as "Given to Patient". This should also be recorded on the last page in the box. (Refer to patient's record). If the instructor gives a referral letter, this should be indicated in the recordings in the disposition form and page 4 of patient's record.
The student who took the radiographic survey is ultimately responsible for recording the following information in the patient record in the services column.
1. Date of exposure
2. Number and type of radiograph (Example: 4 BWX - 1 retake; 18 PAX, 4 BWX)
3. Entry must be signed by student and instructor
4. Outside of patient's record - "radiographs" record date and type.

Within 24 hours, both sets of films must be mounted and labeled in pencil. Be sure to erase labels from used mounts BEFORE mounting the radiographs. Label the mounts with Patient's name, date of exposure and type. (Also include your name). If pan must be labeled with patient name and date of exposure in ink.

If one set has been given to patient, the other set must still be mounted.
Note: Do not submit x-rays until all retakes are completed and/or all duplication is done. Rule of 24 hours applies to completed surveys only.

Within one week after completing the radiographic survey, the student must complete evaluating the radiographs using the appropriate forms and leave the following items in the instructor's folder:
- patient's record
- "green" form (demographics completed)
- disposition slip
- completed CRS and/or BW evaluation form (front and back completed)
- the radiographs
- referral letter (demographics completed)
(After reviewing the radiographs and evaluations, the instructor will decide if an appointment is necessary to interpret/evaluate the radiographs. An appointment will be set up.)

NOTE:
• For radiographs not interpreted/evaluated within one week, points will be deducted.
• Points also deducted for failure to follow procedure.
• Use the interpretation criteria listed in this manual.

• When an appointment is established, the following items MUST be available:
  o patient's record
  o disposition slip
  o completed CRS/BW evaluation forms
  o radiographs
  o magnifying glass
  o plastic probe to measure bone level

• Interpretation summary will be documented in the patient's record at the interpretation appointment - by the instructor.
  (See radiographic interpretation form - green)

• If procedures in this manual are not followed completely, points will be deducted and a grade of A0 may be received for the survey. PATIENT RECORDS AND RADIOGRAPHS ARE NOT TO LEAVE THE CLINIC AREA.
RADIOGRAPHIC INFECTION CONTROL

PROCEDURES FOR STERILIZING X-RAY EQUIPMENT

It is the responsibility of the student who exposes the radiographs to follow through with all sterilization and clean-up procedures for each patient, if there is not an x-ray rover.

1. Rinse and dry all Rinn equipment and/or Snap-A-Ray thoroughly.
2. Package all x-ray equipment in the clear bags. Packaging instructions:
   - Rinn Anterior: Anterior arm, anterior aiming device (ring), anterior bite block, anterior BSA (white)
   - Rinn Posterior: Posterior arm, posterior aiming device (ring), posterior bite block
   - Snap-A-Ray: Package separately
3. Record date and your name on tape and place in autoclave.
4. Pan bite block in cold sterile.

The student must use exam gloves, mask and protective eyewear when exposing and processing intraoral radiographs.

- The following must be surface disinfected before and after each patient:
  - Chair
  - Tubehead and PID
  - Control Panel
  - Activating Switch
  - Countertops
  - Lead Apron

- Darkroom surface exposed to contaminated film should be cleaned and disinfected.
INFECTION CONTROL – PROCESSING

Processing film procedure:

- Exposed film should be placed into a cup without touching outside of cup.
- Upon completion of taking x-rays and before entering dark room or using automatic processor, remove gloves and wash hands. Place on overgloves.
- Enter darkroom with cup with exposed film, two additional cups and new gloves.
- If using automatic processor, open lid of dayloader and place cup with exposed film, new exam gloves and two empty cups into dayloader (if manual processing, procedure the same). Close lid of day loader. Turn off lights.
- Remove overgloves and put on new exam gloves.
- If using automatic processor remove over gloves, place hands into sleeves of processor and put on new exam gloves.
  1. Separate film from packet being careful not to touch film with contaminated gloves. Allow the exposed film to drop into one cup and place the contaminated outer covering into the other cup.
  2. When all films have been removed from packet, remove gloves and place into cup with contaminated packets.
  3. Using clean, bare hands, place films into processor or if developing manually, place films on rack.
- Remove hands from processor.
- Open lid of dayloader and remove cups.
- Lead backing removed from contaminated packets wearing overgloves or when film separated from packet.
- Spray paper towel with iodophor. Wipe the contaminated surfaces with appropriate solution and allow to dry.
Student performance in dental radiography will be assessed using the following criteria:

1. **The student will**
   - assess patients medical, dental, and radiation history
   - select appropriate film size
   - accurately record:
     - date of exposure
     - number of exposures (including retakes)
     - obtain all necessary signatures and appropriate authorization
   - implement all infection control procedures and radiation protection procedures
   - demonstrate appropriate film processing and handling
   - demonstrate correct mounting and labeling procedures
   - demonstrate acceptable viewing techniques (viewbox, probe, and magnifying glass)

2. **The student will use the following criteria**
   - recognize shallow palate or floor of mouth, high lingual frenae, tori, and handicapping conditions and adapt technique accordingly
   - recognize labia/linguo version
   - identify appropriate survey including number, size, and type of film to be used for the pediatric, edentulous or handicapped patient

3. **The student will demonstrate the following for interproximal surveys:**
   - identify purpose
   - position films, patient, and tube correctly
   - identify the criteria for good diagnostic quality
   - recognize and be able to correct errors

4. **The student will demonstrate the following for periapicals, including complete radiographic surveys:**
   - identify purpose
   - identify and utilize the principles of the paralleling technique
   - identify and utilize the principles of the bisection of angle technique
   - identify the criteria for good diagnostic quality
   - recognize and be able to correct errors
   - identify and select appropriate film and film holding devices

5. **The student will use the following criteria for radiographic interpretation**
   - differentiate between radiolucent and radiopaque
   - describe radiographic findings in periodontal disease
   - recognize limitations of radiographs in periodontal disease interpretation
   - recognize crestal irregularities
   - recognize interdental septal bond changes
The student will use the following criteria for radiographic interpretation (Continue)

- recognize bone loss: direction, location, amount
- recognize local irritants: calculus, faculty restorations
- recognize changes in width of periodontal membrane space
- determine crown/root ratio
- recognize interradicular bone resorption
- recognize changes in continuity of lamina dura
- describe radiographic findings related to dental caries
- recognize limitations of radiographs in caries detection
- recognize locations for caries lesions: proximal, occlusal, cemental, recurrent
- describe pulpal condition (size, secondary, and sclerotic dentin, pulpstone calcifications)
- describe periapical radiographic findings for
  - hypercementosis
  - internal and external resorption
  - periapical radiolucencies
  - periapical radiopacities
  - changes in periodontal space
  - changes in lamina dura
- describe radiographic appearance of restorative materials
- describe radiographic appearance of normal anatomy and shadows
- identify the following structures
  - enamel, dentin, cementum, pulp
  - periodontal space
  - alveolar process (lamina dura, cortical plates, cancellous bone and trabecular pattern
  - nutrient canals
- identify maxillary anatomic landmarks
- median palatine suture
- incisive canal, fossa, and foramen
- anterior nasal spine
- nasal fossae, septum, turbinates or conchae
- zygomatic arch, molar process or zygomatic process of the maxilla
- maxillary sinus or antrum and septa
- maxillary tuberosity
- coronoid process of mandible
- hamulus (hamular process of medial pterygoid plate)
- other maxillary shadows (nose, upper lip, lateral/canine fossa, palatal tori)
- identify mandibular anatomic landmarks
- lingual foramen
- genial tubercules
- inferior cortex of mandible
- mental ridges
- mandibular canal
- mental foramen
The student will use the following criteria for radiographic interpretation (Continued)

- external oblique ridge
- internal oblique ridge or mylohyoid ridge
- submandibular fossa
- other mandibular shadows (lower lip, mandibular tori)
- identify variations in morphology
- microdontia and macrodontia
- gemination fusion and concrescence
- supernumerary
- dilacerations
- identify variations in structure
- enamel hypoplasia
- amelogenesis imperfecta
- dentinogenesis
- dentin dysplasia
- identify variations in eruption
- impaction
- identify other variations
- tori
- attrition
- abrasion
- retained roots
- foreign bodies
**X-RAYS**

Periapical-Bitewing Radiograph Evaluation Guide

Routine periapical and bitewing radiographs are evaluated according to the following criteria:

A. **Proper teeth recorded (determined by proper horizontal film placement)**

*View or Area ...................... Teeth or area to be recorded*

1. **Molar .................................3rd and 2nd molar**
   
   Maxillary molar record includes maxillary tuberosity
   
   Mandibular molar record includes retromolar area, bone distal to 3rd molar crown, or the inferior aspect of the anterior border of the ascending ramus

2. **Premolar..........................Distal of canine, 1st and 2nd premolars, 1st molar**
   
   Posterior periapical in the ten-periapical film examination for children......
   
   distal of canine, 1st and 2nd premolars and 1st permanent molar regions. Both primary and permanent teeth are to be recorded completely if both are present.

3. **Canine..............................Maxillary: canine, lateral incisor**
   
   Mandibular: canine

4. **Incisor..............................Maxillary: central incisors**
   
   Mandibular: central and lateral incisors

5. **Bitewing...........................No. 3 film posterior: distal of canines, proximals of all clinically erupted posterior teeth.**
   
   No. 2 film posterior
   
   Premolar: distal of canines, proximals of 1st and 2nd premolars, mesial of 1st molars.
   
   Molar: distal proximals of the most posteriorly clinically erupted molars.
   
   No. 0 film posterior: distal of primary canines and proximals of the primary molars.
B. Entire crown and root (determined by proper vertical film placement and vertical angulation).

C. Good view of periapical areas (determined by vertical film placement and vertical angulation).

D. Good proximal and interproximal views (determined by proper horizontal angulation).

E. Minimum elongation and foreshortening (determined by proper vertical angulation).

F. Good radiographic density (determined by good developing).

G. Good radiographic contrast (determined by adequate kVp and developing).

H. Good detail (determined by degree of immobilization of film, patient and x-ray tube; flatness of film. Surface; adequate kVp and developing).

I. No artifacts.
BISECTING ANGLE

This technique utilizes a short cone (usually) with the central ray directed near the apex of the tooth so the rays are perpendicular to an imaginary line which bisects the angle formed by the plane of the film and the plane of the long axis of the tooth. (If the central ray is directed perpendicular to the long axis of the tooth, the image will appear elongated. If the central ray is directed perpendicular to the plane of the film, the image will appear foreshortened.) The film is placed touching the tooth (1/8" - 1/4" above or below occlusal line) and therefore is not in parallel relationship. As a result of the lack of parallelism and the lack of a right angle relationship between the ray and the tooth and film, areas below the apex of the tooth are often distorted. The distortion is due to oblique exposures and bending of film.

**Imaginary Bisecting Line**

- **Film**
- **Central Ray**
- **Object (Tooth)**
- 90°
**BISECTING ANGLE TECHNIQUE**

**PRINCIPLE:**

Using the bisecting angle technique, the film is placed as close to the teeth as possible at an angle. The central ray (CR) is positioned perpendicularly to the imaginary bisector of the angle created by the long axis of the tooth and the film plane. A short (8") position indicating device is used (PID).

**FILM PLACEMENT:**

The film is placed as close as possible to the teeth utilizing bite blocks, Snap-a-ray film holder or hemostat.

Generally, the anterior films should have an incisal margin of 1/4" and the posterior films possessing an occlusal margin of 1/8" margin.

**VERTICAL ANGULATION:**

The floor to ceiling adjustment of the PID to determine an accurate image size. The CR is directed at right angles to the bisector of the angle between the film plane and the long axis of the tooth.

Errors in vertical angulation:

A. Excessive vertical angulation: causes foreshortening and must be decreased to obtain an accurate image.
B. Insufficient vertical angulation: causes elongation and must be increased to obtain an accurate image.

**HORIZONTAL ANGULATION:**

The side to side adjustment of the PID to obtain open contacts without overlapping of image proximal surfaces.

**Molars:** CR directed between the first and second molars. The open face of the PID will be parallel to the plane of the facial surfaces of the molars. (Note: place a hand along the outside surface of the patient's face along the molar plane as a guide.)

**Premolars:** CR directed between the first and second premolars. Open face of the PID should be parallel to the premolar facial plane.

**Canine:** CR directed at the distal surface of the canine.

**Centrals:** CR directed between the central incisors at the midline of the arch.
HORIZONTAL ANGULATION: (continued)

Central-lateral: CR directed between the central and the lateral.

Point of Entry: The point at which the CR enters the face and contacts the film. The CR should be directed at the center of the film. Use the following outer facial landmarks to determine the correct point of entry in order to avoid cone cutting (collimator cutoff) of the film.

A. The maxillary facial landmarks lie along the root apices of the maxillary teeth located on an imaginary line between the ala of the nose to the tragus of the ear.

B. The mandibular facial landmarks lie along the root apices of the mandibular teeth located on an imaginary line between the symphysis of the chin to the tragus of the ear, 2" above the lower border of the mandible.

Molars: Follow a line directly beneath the outer canthus of the eye. (Note: when exposing third molar films the point of entry should be positioned more posteriorly.)

Premolars: Follow a line directly beneath the inner canthus of the eye or the pupil.

Canine: Follow a line beneath the ala of the nose.

Centrals: Follow the tip of the nose or the symphysis of the chin.

Central-laterals: Follow at a point half way between the ala of the nose and the tip of the nose.

BISECTING TECHNIQUE VERTICAL ANGLES
Maxillary:

- Incisor: 40° to 45°
- Canine: 45°
- Premolar: 30° to 35°
- Molar: 20° to 25°

Mandibular:

- Incisor: -15°
- Canine: -10° to -20°
- Premolar: -5° to -10°
- Molar: 0° to -5°

Bite Wings:

- Posteriors: 5° to 10°
INTERPROXIMAL (BITEWING) TECHNIQUE

PURPOSE:

To reveal the presence of interproximal and occlusal caries, dental calculus, pulp changes, overhanging restorations, improperly fitted restorative crowns, secondary caries beneath restorations, and resorption of alveolar bone.

PRINCIPLE:

Both the maxillary and the mandibular teeth are included on the same film. Two or four films are used depending on size of the arch and the film, and the teeth present. The patient is seated in an upright position, with the maxillary occlusal plane parallel and the midsagittal line perpendicular to the floor.

FILM PLACEMENT:

1. Parallel to the teeth, may need to place more lingually.
2. Tab of the holder in the center of the film with the line of the tab parallel to the plane of the teeth.
3. The molar bitewing film extends from the distal of the second premolar to the distal of the terminal molar.
4. The premolar film extends from the distal of the canine to the mesial of the first molar.
5. Roll the corner of the premolar film to fit within the arch.
6. Hold the tab gently on the occlusal surfaces of the mandibular teeth (may bend it over the facial) to provide an equal distribution of the maxillary and mandibular teeth. May use a cotton roll to prevent mandibular displacement.

VERTICAL ANGULATION:

+5 to +10 (not at 0) to avoid overlap of the occlusal cusps.

HORIZONTAL ANGULATION:

1. The CR should strike the film at right angles.
2. The CR should pass through the embrasures of the teeth being radiographed (open face of PID parallel to plane of teeth).
3. Imagine a horizontal line across PID and position this parallel to the tab and the film. Place your hand against the patient's face to determine the plane of the teeth and parallel the open face of the PID to your hand.
POINT OF ENTRY:

The tab should be in the center of the cone. Place the tip of your finger against the tab and align the end of the PID to the first joint of the finger to avoid cone cutting.

VERTICAL ANGULATION

HORIZONTAL ANGULATION

Molar  Premolar
PARALLELING TECHNIQUE

PRINCIPLE:

When using the paralleling technique, the film is placed parallel to the teeth being radiographed. The CR is directed perpendicularly to both the film and the teeth (the open face of the PID will be parallel to the film and the teeth). A long 16” PID is used.

FILM PLACEMENT:

To obtain a parallel relationship between the film and the teeth, the film is positioned farther away from the teeth being radiographed (lingually toward the midline). Film holders must be used (bite blocks, VIP, Rinn XCP, and other paralleling devices). The areas of film coverage are the same as those used for the bisecting angle technique.

VERTICAL ANGULATION:

The CR is directed at right angles to both the long axis of the teeth and the film plane. The open face of the PID must be parallel to both the teeth and the film.

HORIZONTAL ANGULATION:

To obtain open contacts, the horizontal angulation should be directed through the embrasures of the teeth being radiographed. The horizontal angles are the same as those used for the bisecting angle technique, being sure that the open face of the PID is parallel to the film and the teeth.

POINT OF ENTRY:

When a locating ring is not being used, the points of entry to follow are the same facial landmarks as those used in the bisecting angle technique. The CR should be directed at the center of the film. When using a locating ring, the PID should be parallel to and aligned with the ring.
PARALLELING TECHNIQUE

In paralleling technique the plane of the film is placed parallel to the long axis tooth and the central ray is directed perpendicular to both tooth and film. This technique utilizes the long cone (16") and the focus-film distance is therefore greater than that of bisecting angle.

The oral cavity does not always lend itself to the distance from object to film being as short as possible simultaneously with object and film parallel. (To facilitate film parallel to tooth distance from tooth and film is necessarily increased.)

If short radiation source to object used there is distortion. The extended or long cone used with paralleling technique provides for increased radiation source to object distance (focus film distance) and compensated for the distortion and unsharpness which results from increased object to film distance.

The advantage of increased focus-film distance is the x-rays reaching the film tend to be more parallel to each other and distortion of the image by magnification is decreased.

MOUNTING

- Radiographs are arranged in anatomic order for viewing.
- Mounts come in various sizes and a various number of windows.
- Bitewing mounts have either two or four windows.
- The most commonly used periapical mounts have 14 to 18 windows. The windows also vary in size corresponding with various film sizes used.
DARKROOM

1. Check water temperature. Adjust water so that it reads between 65 - 68 F.
2. Refill water tanks. Replace overflow tubes.
3. Replenish developer and fixer if needed. Stir after adding solution.
4. Change solutions according to chart posted. Prepare new solutions if needed.
   Developer - 3 2 oz. to 16 oz. tepid water. Fixer - 3 2 oz. to 16 oz. tepid water.
5. Monthly, remove inner tanks and scrub thoroughly. (They are not heavy and are easily removed.) Refill.
6. Clean counter tops.
7. Turn on exhaust fan.

Kodak Farmers Reducer

Use: To lighten an overly dark film

• Use Part A in glass jar for up to 2 hour.
  Keep checking.
  Rinse film.

• Use Part B in glass jar for 2 hour.
  Rinse film again.
**Guidelines for Prescribing Dental Radiographs**

The recommendations in this chart are subject to clinical judgment and may not apply to every patient. They are to be used by dentists only after reviewing the patient’s health history and completing a clinical examination. Because every precaution should be taken to minimize radiation exposure, protective thyroid collars and aprons should be used whenever possible. This practice is strongly recommended for children, women of childbearing age and pregnant women.

<table>
<thead>
<tr>
<th>TYPE OF ENCOUNTER</th>
<th>PATIENT AGE AND DENTAL DEVELOPMENTAL STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child with Primary Dentition</strong> (prior to eruption of first permanent tooth)</td>
<td><strong>Child with Transitional Dentition</strong> (after eruption of first permanent tooth)</td>
</tr>
<tr>
<td><strong>New patient</strong> being evaluated for dental diseases and dental development</td>
<td>Individualized radiographic exam consisting of selected periapical/occlusal views and/or posterior bitewings if proximal surfaces cannot be visualized or probed. Patients without evidence of disease and with open proximal contacts may not require a radiographic exam at this time.</td>
</tr>
<tr>
<td><strong>Recall patient</strong> with clinical caries or at increased risk for caries**</td>
<td>Posterior bitewing exam at 6-12 month intervals if proximal surfaces cannot be examined visually or with a probe</td>
</tr>
<tr>
<td><strong>Recall patient</strong> with no clinical caries and not at increased risk for caries**</td>
<td>Posterior bitewing exam at 12-24 month intervals if proximal surfaces cannot be examined visually or with a probe</td>
</tr>
</tbody>
</table>

*Document created: November 2004*
## Guidelines for Prescribing Dental Radiographs, cont’d.

<table>
<thead>
<tr>
<th>Type of Encounter</th>
<th>Patient Age and Dental Development Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child with Primary Dentition (prior to eruption of first permanent tooth)</td>
</tr>
<tr>
<td>Recall patient* with periodontal disease</td>
<td>Clinical judgment as to the need for and type of radiographic images for the evaluation of periodontal disease. Imaging may consist of, but is not limited to, selected bitewing and/or periapical images of areas where periodontal disease (other than nonspecific gingivitis) can be identified clinically.</td>
</tr>
<tr>
<td>Patient for monitoring of growth and development</td>
<td>Clinical judgment as to need for and type of radiographic images for evaluation and/or monitoring of dentofacial growth and development</td>
</tr>
<tr>
<td>Patient with other circumstances including, but not limited to, proposed or existing implants, pathology, restorative/endodontic needs, treated periodontal disease and caries remineralization</td>
<td>Clinical judgment as to need for and type of radiographic images for evaluation and/or monitoring in these circumstances.</td>
</tr>
</tbody>
</table>

*Clinical situations for which radiographs may be indicated include but are not limited to:

A. Positive Historical Findings
   1. Previous periodontal or endodontic treatment
   2. History of pain or trauma
   3. Familial history of dental anomalies
   4. Postoperative evaluation of healing

Document created: November 2004
5. Remineralization monitoring
6. Presence of implants or evaluation for implant placement

**B. Positive Clinical Signs/Symptoms**
1. Clinical evidence of periodontal disease
2. Large or deep restorations
3. Deep carious lesions
4. Malposed or clinically impacted teeth
5. Swelling
6. Evidence of dental/facial trauma
7. Mobility of teeth
8. Sinus tract ("fistula")
9. Clinically suspected sinus pathology
10. Growth abnormalities
11. Oral involvement in known or suspected systemic disease
12. Positive neurologic findings in the head and neck
13. Evidence of foreign objects
14. Pain and/or dysfunction of the temporomandibular joint
15. Facial asymmetry
16. Abutment teeth for fixed or removable partial prosthesis
17. Unexplained bleeding
18. Unexplained sensitivity of teeth
19. Unusual eruption, spacing or migration of teeth
20. Unusual tooth morphology, calcification or color
21. Unexplained absence of teeth
22. Clinical erosion

**Factors increasing risk for caries may include but are not limited to:**
1. High level of caries experience or demineralization
2. History of recurrent caries
3. High titers of cariogenic bacteria
4. Existing restoration(s) of poor quality
5. Poor oral hygiene
6. Inadequate fluoride exposure
7. Prolonged nursing (bottle or breast)
8. Frequent high sucrose content in diet
9. Poor family dental health
10. Developmental or acquired enamel defects


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11. Developmental or acquired disability
12. Xerostomia
13. Genetic abnormality of teeth
14. Many multisurface restorations
15. Chemo/radiation therapy
16. Eating disorders
17. Drug/alcohol abuse
18. Irregular dental care
APPENDIX

RADIOGRAPHIC VOCABULARY

ABSORPTION
The process by which radiation imparts some or all of its energy to any material through which it passes.

ABSORBED DOSE
The energy imparted to matter by ionizing particles per unit of mass of irradiated material. The special unit of absorbed dose is the Rad.

ADDED FILTER
Filter added to the inherent filter.

ALOPECIA
Loss of hair. Alopecia may result following prolonged exposure to roentgen rays.

AMPERE
A unit of electrical current.

ANGSTROM UNIT
(A.U.) equals one hundred millionth of a centimeter, or 0.000,000,001 cm.

ANODE
The anode or target is a tungsten block set at an angle of either 20° or 45° to the cathode. The anode is the positive terminal and emits roentgen rays from the point of impact of the electron stream from the cathode.

ATTENUATION
The reduction in the intensity of radiation upon passage through matter. In general, it is due to a combination of scattering and absorption.

BACKGROUND RADIATION
Ionizing radiation that is always present. It consists of cosmic rays from outer space, naturally occurring radiation from the earth and materials around us, and radiation from radioactive materials.

BREMSSTRAHLUNG RADIATION
Slowing down of accelerated electrons as they collide with the nuclei of target atoms.
CASSETTE
A hinged film container with a low absorption front and heavy back. It contains a thin intensifying screen cemented to the front and a thick intensifying screen cemented to a padded, hinged back. It is lighttight, maintains exact contrast between screens and film, and by padding and back springs allows for expansion and contraction and ease in opening.

CATHODE
The cathode consists of a spiral filament of tungsten wire, placed within a molybdenum cylinder for the purpose of focusing the electron stream. The cathode is the negative terminal.

CATHODE RAYS
Any stream of electrons, as in a tube which the source of electrons is a heated filament.

CENTRAL BEAM
Is that narrow, slightly diverging bundle of x-radiation passing from the center of the focal spot and through the center of the limiting diaphragm.

CHARACTERISTIC EFFECT
Result of the difference in the binding energies of involved orbital electrons. It is a form of radiation originating from an atom following removal of electron.

CHEMICAL FOG
It is a brownish dull appearance of the films, generally caused by over developing, by the use of too strong a chemical solution, or by an old, exhausted, or contaminated developer.

COLLIMATION
The restriction of the useful beam to an appropriate size; generally, to a diameter of 2 3/4 in. at the skin surface.

COMPTON SCATTER
A scattered photon of lower energy deflected from its original path.

CONTRAST
1. The difference in density between adjacent areas of different density.
2. The difference in density in the radiograph produced by radiation projected through an object having a given range of opacities.
3. The comparative measure of the degree of blackening in the different areas on the same film.

DENSITY
The general tendency of the entire film toward a lighter or darker appearance. A dental radiograph may be very dark (greater density) or very light (less density).
DETAIL
Refers to the point by point delineation of the minute structural elements of the objects in the shadow images formed in the radiograph.

DEVELOPER
Is an agent that reduces the exposed area of the emulsion so that it is visible to the human eye. It is generally composed of hydroquinone, elon, sodium sulfate, and other chemicals in solution.

DIAGNOSTIC YIELD
Amount of diagnostic information made available per unit of x-radiation absorbed by the patient.

DIAPHRAGM
A plate, usually lead, with a central aperture so placed to restrict the useful beam.

DISTANCE FACTOR
Refers to the distance between the focal spot of the tube and the film.

DISTORTION
A change in the size or shape of the resulting image upon the film. It is caused by an improper alignment of the object, film, and central beam; by a curved or bent film; and/or by a disproportionate ratio between the object-film and focal spot-film distance.

DOSAGE
The radiation delivered to a specified area of the body. The unit for dose specification for x-rays in the roentgen.

ELONGATION
An elongated shadow image is one that is longer than the object radiographed. This is most often caused by insufficient vertical angulation.

EMULSION
X-ray films are coated with an emulsion that is composed of minute particles of sensitive silver bromide, silver halide, or silver chloride suspended in a special gelatin. This emulsion is coated evenly on one or both sides of a blue-tinted or transparent cellulose acetate base.

EXPOSURE (EXPOSURE RATE)
A measure of radiation quantity. It is the quantity of radiation in an area to which the patient is exposed. Product of MA and time x-rays produced.

FILTER
Material placed in the useful beam to absorb preferentially the less penetrating radiations.
FILM ARTIFACT
A substance or structure not naturally present in living tissues, but of which an authentic image appears in a radiograph; a blemish or an unintended radiograph image which is not an authentic appearance, such as may result from the faulty manufacture, manipulation, exposure, or processing of an x-ray film.

FIXING BATH
A fixing bath removes the unexposed silver salts and hardens the emulsion. It is generally composed of sodium thiosulfate; alum, sodium sulfite, and acetic acid. The sodium thiosulfate clears the unexposed areas, the alum hardens the emulsion and the acetic acid is an acidifier and the sodium sulfite is a preservative.

FLUOROSCOPE
A device consisting of a fluorescent screen mounted in a metal frame covered with lead glass. In the presence of x-rays, the screen glows in direct proportion to the intensity of the remnant x-radiation, producing visual impressions of the densities traversed.

FOCAL DISTANCE
Focal, target, target-film, or focal-film distance refers to the distance between the focal spot of the tube and the film.

FOCAL SPOT
Is the area of the anode or target that is bombarded by the electron stream when the tube is in action.

FORESHORTENING
A foreshortened shadow image is one that is shorter than the object radiographed.

GEOMETRIC UNSHARPNESS
Poor image definition due to penumbra. Particularly when there is motion of the tube head, such as secondary shadows will surround the primary shadows of the image.

HARD RAYS
Rays of shorter wave lengths and higher kilovoltage (greater penetration).

HORIZONTAL ANGULATION
Is sometimes referred to as directional angulation and is the projection of roentgen rays in a horizontal plane around the jaw.

INHERENT FILTER
Filtration induced by the glass wall of the x-ray tube, oil surrounding the tube and any permanent tube enclosure.
IONIZATION
The making of an electrically stable atom unstable by displacing or adding one or more units of electrical charge. Any process by which a neutral atom or molecule loses or gains electrons, thereby acquiring a negative charge.

KILOVOLT (kv)
Is 1,000 volts.

KILOVOLTOMETER
A common voltmeter calibrated to read in kilovolts. It is connected across the high voltage supply.

LD 50-30 (MEdIAN LETHAL) DOSE
That dose of radiation which will be lethal for 50% of a large population in a specified length of time, usually 30 days.

LEAKAGE RADIATION
All radiation coming from within the tube housing, except for the useful (as through the wall of the tube housing or around the cone).

MAGNIFICATION
Is the form of distortion that causes an enlargement of the image upon projection. It is brought about by a short focal-film distance or by a great object-film distance.

MAXIMUM PERMISSIBLE DOSE (MPD)
The maximum accumulated dose that persons who are occupationally exposed may have at any given time of their life. This is determined by the formula 5(N minus 18), where N equals the individuals age at the last birthday.

MILLIAMMETER
An instrument that indicates the amount of current passing through the x-ray tube.

MILLIAMPERE
A milliampere (ma) is 1/1,000 of an ampere: it refers to the quantity of x-radiation emitted from the focal spot.

OVERLAPPING
A term used to refer to a distortion of the tooth image in which the structures of one tooth are superimposed over the structures of the adjacent tooth. This is most often caused by faulty horizontal angulation.

PHOTOELECTRIC EFFECT
An ejected electron resulting from interaction of a photon with an inner shell electron. Has low energy and will cause further ionizations until all its energy depleted.
PHOTOGRAPHIC DERMATITIS
   Is a form of eczema causing painful cracking of the skin. It is caused by the chemicals of the processing solutions.

PRIMARY PROTECTIVE BARRIER
   Barrier sufficient to attenuate the useful beam to the required degree.

PRIMARY RADIATION
   X-rays coming directly from focal spot of x-ray tube.

RAD (ROENTGEN-ABSORBED DOSE)
   A special unit of absorbed dose equal to 100 ERGS (units of energy) per gram of tissue. For x-rays the RAD is approximately numerically equivalent to the Roentgen.

RADIATION
   Made up of beams of subatomic particles traveling together in streams at high velocity and/or of rhythmic electric and magnetic oscillations traveling at the speed of light, differing only in wave length.

RADIATION FILM BADGE
   A container holding two dental-type films which is clipped to the gown. One film is fast (very sensitive), and the other slow (relatively insensitive). After being worn for a period of time, the films are developed and their densities compared in a photo-densitometer with other films exposed to known amounts of radiation.

RADIOLUCENT
   Freely penetrable to roentgen rays. Objects that are radiolucent do not resist the passage of or absorb the x-radiation to any great degree and appear within the range of dark gray to black on the radiograph.

RADIOPAQUE
   Not freely penetrable by roentgen rays. Objects that absorb or resist the passage of the x-radiation to a greater degree are considered radiopaque and appear within the range of gray to white on the radiograph.

RELATIVE BIOLOGICAL EFFECTIVENESS (RBE)
   A factor used to compare the biological effects of absorbed doses of differing types of radiation in a particular organism or tissue.

REM (ROENTGEN EQUIVALENT MAN)
   The unit of dose equivalence. It is used to compare the biologic effects of the various types of radiation. For radiation-protective purposes, REMS, RADS, and Roentgens may be considered interchangeable.
ROENTGEN RAYS (X-RAYS)
Form of radiant energy having power to penetrate substances ordinarily opaque.

ROENTGEN(R)
Unit of radiation exposure or intensity. Measurement of ionization in air.

SAFELIGHT
Is a source of illumination, of a color and intensity that will not fog an x-ray film within reasonable exposure time.

SCATTERED RADIATION
Radiation that, during passage through a substance, has been deviated in direction. It may also have been modified by an increase in wave length. It is one form of secondary radiation.

SECONDARY RADIATION
Radiation emitted by any matter being irradiated with x-rays.

SIALOLITH
A salivary calculus or hardened stone-like mass that forms within the salivary duct. If of sufficient size, such masses appear slightly radiopaque on the radiograph.

SOFT RAYS
Rays of longer wave length and lower kilovoltage (lesser penetration).

STRAY RADIATION
Radiation not serving any useful purpose. It includes leakage and secondary radiation.

TARGET
The small block of tungsten embedded in the face of the anode, bombarded by the electrons streaming toward it from the cathode. The focal spot is located on the target.

THOMPSON SCATTER
Change in direction without loss of energy by the x-ray photon.

TOTAL FILTER
Sum of inherent and added filters.

USEFUL BEAM
That part of the primary radiation that passes through the cone, aperture, or other collimator.
VERTICAL ANGULATION
The projection of the roentgen rays in a vertical plane, either from above downward toward the region to be examined or from below upward. In the first instance, it is referred to as plus vertical angulation, and in the second, as minus vertical.

VOLT
A volt is the unit of electromotive force. It is the unit that is used to measure the tendency of a charge to move from one place to another.

X-RAY TUBE
The device in which x-rays are generated. It consists of an evacuated glass envelope into which are sealed two electrodes--the cathode, or negative electrode (the source of electrons), and the anode, or positive electrode.
## GRADING

<table>
<thead>
<tr>
<th>Grade</th>
<th>Ranges</th>
<th>Grades</th>
<th>Ranges</th>
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<tbody>
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<td>100</td>
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<td></td>
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<td>A-</td>
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<td>4.1</td>
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<td>B-</td>
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<td></td>
<td>53</td>
<td>.3</td>
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<td></td>
<td>52</td>
<td>.2</td>
<td></td>
</tr>
</tbody>
</table>
# Den 111: Radiography Lab Grading

<table>
<thead>
<tr>
<th>Radiation Hygiene</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> Uses lead shielding</td>
<td>Uses lead shielding including thyroid collar</td>
<td>Uses lead shielding incorrectly</td>
<td>Absence of lead shielding</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input Factors</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> - Selects adult or child</td>
<td>No errors</td>
<td>--N/A</td>
<td>--Incorrect selection (A/C)</td>
</tr>
<tr>
<td>- Selects correct exposure site</td>
<td>One error</td>
<td>--Minor errors</td>
<td>--Incorrect exposure site</td>
</tr>
<tr>
<td>--- Depresses exposure button and holds until exposure complete</td>
<td>--Accurately activates exposure button</td>
<td>--N/A</td>
<td>--Fails to depress exposure button for full duration of exposure</td>
</tr>
<tr>
<td><strong>Non-critical:</strong> Completes input factors prior to film placement</td>
<td>Completes input factors prior to film placement</td>
<td>Completed input factors after film placement</td>
<td>Did not select input factors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Position/BSA</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> (Maxillary) occlusal plane parallel and sagittal plane perpendicular to the floor (Mandibular) occlusal plane parallel to the floor</td>
<td>No errors</td>
<td>Minor errors</td>
<td>Major errors (some examples): (Maxillary)—inappropriate chin position (Mandibular)—inappropriate chin position</td>
</tr>
<tr>
<td><strong>Non-critical:</strong> Patient too high or too low</td>
<td>Patient at appropriate level</td>
<td>Patient too high or too low</td>
<td>Error that effects outcome of radiograph</td>
</tr>
</tbody>
</table>
### Meets Standard | Moving Toward Standard | Does not Meet Standard
---|---|---
**Patient Position /BWX**
**Critical:** Maxillary occlusal plane parallel and sagittal plane perpendicular to floor | No errors | No more than 2 exposures show a 10 degree chin tilt up or down from horizontal plane | More than 2 exposures have a 10 degree chin tilt from horizontal plane
**Non-critical:** Patient too high or low | Appropriate patient position | Patient needs minor adjustments | Errors that effect outcome of radiograph

### Film Placement
**Critical:** --Film packet placed tubeside
--Placed film over area to be exposed
--For periapical exposures raised dot toward incisal/occlusal (dot to slot)
--(BSA) film close to object
--(Parallel) film parallel to object

<table>
<thead>
<tr>
<th></th>
<th>--Film tubeside</th>
<th>--N/A</th>
<th>--Film packet not placed tubeside</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Film placed correctly</td>
<td>--Film placed over area to be exposed but not in proper position</td>
<td>--Film not placed over area to be exposed</td>
</tr>
<tr>
<td></td>
<td>--Raised dot placed correctly</td>
<td>--Film tubeside but raised dot apical</td>
<td>--N/A</td>
</tr>
<tr>
<td></td>
<td>--No errors</td>
<td>--Minor error</td>
<td>--Film placed incorrectly and diagnostically unacceptable</td>
</tr>
<tr>
<td></td>
<td>--No errors</td>
<td>--Minor error</td>
<td>--Film placed incorrectly and diagnostically unacceptable</td>
</tr>
</tbody>
</table>
**Non-critical:** N/A

N/A

N/A

N/A
<table>
<thead>
<tr>
<th>Beam Angle</th>
<th>Critical: --For BSA vertical angle directed perpendicular to bisector</th>
<th>Critical: --For parallel vertical angle directed perpendicular to film and object</th>
<th>Critical: --For BWX uses positive vertical angle</th>
<th>Critical: --Horizontal angle directed between appropriate teeth and parallel with proximal surfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--No image distortion</td>
<td>--No image distortion</td>
<td>--No cuspal overlap and equal coronal portions</td>
<td>--No overlap</td>
</tr>
<tr>
<td></td>
<td>--Minor image distortion but diagnostically acceptable</td>
<td>--Minor image distortion but diagnostically acceptable</td>
<td>--Minor overlap and/or unequal portions but diagnostically acceptable</td>
<td>--Minor overlap and diagnostically acceptable</td>
</tr>
<tr>
<td></td>
<td>--Major image distortion and not diagnostically acceptable</td>
<td>--Major image distortion and not diagnostically acceptable</td>
<td>--Diagnostically unacceptable</td>
<td>--Diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point of Entry</th>
<th>Critical: Central ray directed to center of film</th>
<th>Non-critical:</th>
<th>Critical: Follows appropriate processing procedures</th>
<th>Non-critical:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--No cone cut or minor</td>
<td>--Diagnostically acceptable</td>
<td>--Diagnostically acceptable</td>
<td>--Diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Processing

<table>
<thead>
<tr>
<th>Critical: Follows appropriate processing procedures</th>
<th>--Minor error</th>
<th>--Diagnostically acceptable</th>
<th>Diagnostically unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-critical:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Item</td>
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<tr>
<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Radiation Hygiene</strong>—(any error = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Input Factors</strong>—(more than 2 errors = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Uses correct film holding device and uses correctly</strong>—(more than 2 errors = 0)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Patient Position — BSA</strong>—(any error = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient Position—BWX</strong>—(any error = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Film Placement</strong>—(more than 3 minor errors = 0)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Vertical Angle</strong>—(more than 2 errors = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Horizontal Angle</strong>—(more than 2 errors = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Point of Entry</strong>—(cone cut)—(more than 3 errors = 0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Completes exposures in allotted time frame</strong>—(if exposures not completed = 0)</td>
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</tr>
<tr>
<td><strong>Processing</strong>—(more than 1 error = 0)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td>Film Placement</td>
<td>Cone Placement</td>
<td>Horizontal Angle</td>
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</tbody>
</table>

Student must score minimum of 24 to pass lab final and pass the lab portion of the course. Students earning below 24 will not have passed the lab portion of the course and therefore will not pass Den 111-Dental Radiography I. Therefore, if more than 3 criterion areas are not meeting standards you fail the course.

Lab Final:111
5/03
Den 121: Radiography Lab Grading

<table>
<thead>
<tr>
<th>Authorization/Histories</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong>--Obtains authorization including type of survey from patient’s dentist or MCC supervising dentist</td>
<td>--Obtains complete authorization and follows authorization request</td>
<td>--N/A</td>
<td>--Does not obtain appropriate authorization or takes inappropriate survey (did not follow authorization request)</td>
</tr>
<tr>
<td>--Thoroughly completes or updates personal, medical and dental histories</td>
<td>--Records follow-up questions appropriately</td>
<td>--Minor errors on follow-up questions</td>
<td>--No follow-up on positive answers or incorrect information recorded</td>
</tr>
<tr>
<td>--Has patient remain until processing and retakes are completed</td>
<td>--All retakes and processing are completed in one appointment</td>
<td>N/A</td>
<td>--Patient has to return for retakes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infection Control</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong>-- Uses appropriate infection control procedures prior to seating patient</td>
<td>--Using appropriate solution wipes the x-ray arm, yoke, tube head, BID, headrest, chair (seat and arm), leaded apron and thyroid collar and cabinet tops. Places blue barrier wrap on control panel</td>
<td>N/A</td>
<td>--Errors that do not follow protocol for appropriate infection control</td>
</tr>
<tr>
<td>--Uses appropriate infection control procedures during x-ray exposure</td>
<td>--Places unexposed film in one area and exposed film in cup</td>
<td>--N/A</td>
<td>--Errors that do not follow protocol for appropriate infection control</td>
</tr>
<tr>
<td>--Uses appropriate infection control procedures for</td>
<td>--Upon completing exposures removes exam</td>
<td>--N/A</td>
<td>--Errors that do not follow protocol for appropriate infection control</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td><strong>processing</strong></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>gloves, washes hands, places on over gloves, takes new exam gloves, cup with exposed film and two additional cups to processing area. Uses new exam gloves for opening film packets. When last packet opened, remove gloves placing in waste cup and places film through processor or on rack with bare hands</td>
<td>-- Using appropriate solution wipes the x-ray arm, yoke, tube head, BID, headrest, chair (seat and arm), leaded apron and thyroid collar and cabinet tops. Removes blue rrier, discards all waste in biohazard and uses appropriate protocol for care of the x-ray aiming devices</td>
<td>--Minor error in packaging of x-ray aiming devices</td>
</tr>
<tr>
<td></td>
<td>-- Uses appropriate infection control procedures after dismissing patient, including care of the x-ray aiming devices</td>
<td>-- Errors that do not follow protocol for appropriate infection control</td>
<td></td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Radiation Hygiene</strong></td>
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<tr>
<td><strong>Critical:</strong></td>
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</tr>
<tr>
<td>--X-ray film is placed behind protective barrier</td>
<td>--X-ray film behind protective barrier</td>
<td>N/A</td>
<td>--Film not behind protective barrier</td>
</tr>
<tr>
<td>--Uses lead shielding</td>
<td>--Uses lead shielding including thyroid collar</td>
<td>--Uses lead shielding incorrectly</td>
<td>--Absence of lead shielding</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>--Stands behind protective barrier during exposure</td>
<td>--Stands behind protective barrier during exposure</td>
<td>--N/A</td>
<td>--Is not behind protective barrier during exposure</td>
</tr>
<tr>
<td>--Depresses exposure button and holds until exposure complete</td>
<td>--Correctly activates exposure button</td>
<td>--N/A</td>
<td>--Fails to depress exposure button for full duration of exposure</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Input Factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> -Selects adult or child -Selects correct exposure site</td>
<td>No errors Correct exposure site selected</td>
<td>--N/A N/A</td>
<td>--Incorrect selection (A/C) --Incorrect exposure site</td>
</tr>
<tr>
<td><strong>Non-critical:</strong> Completes input factors prior to film placement</td>
<td>Completes input factors prior to film placement</td>
<td>Completed input factors after film placement</td>
<td>Did not select input factors</td>
</tr>
<tr>
<td><strong>Armamentarium</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> --Correctly assembles anterior and posterior aiming devices for parallel technique</td>
<td>No errors</td>
<td>Minor error (for example using wrong block) that still gives a diagnostically acceptable radiograph</td>
<td>Incorrectly assembles armamentarium yielding a diagnostically unacceptable radiograph</td>
</tr>
<tr>
<td><strong>Film Placement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> --Film packet placed tube side --Places film over area to be exposed</td>
<td>--Film tube side --Film placed correctly over the area to be exposed</td>
<td>--N/A</td>
<td>--more than one film packet not placed tube side --More than 3 film not placed over area to be exposed for PAX and 2 for BWX</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
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<td>------------------------</td>
</tr>
<tr>
<td>--For periapical exposures raised dot toward incisal/occlusal</td>
<td>--Raised dot placed correctly errors)</td>
<td>--Film tube side but raised dot apical (no more then 3 errors)</td>
<td>--More than 3 film have raised dot apical</td>
</tr>
<tr>
<td>--(Parallel) film parallel as possible to object</td>
<td>--No errors</td>
<td>--Minor error (no more then 4 errors)</td>
<td>--More than 4 film placed incorrectly and diagnostically unacceptable for PAX and more then 2 for BWX</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Patient Position/BWX**

| **Critical:** Maxillary occlusal plane parallel and sagittal plane perpendicular to floor | No errors                                               | No more than 2 exposures show a 10 degree chin tilt up or down from horizontal plane | More than 2 exposures have 10 degree chin tilt from horizontal plane |
| **Non-critical:** Patient too high or too low                          | Appropriate patient position                            | Patient needs minor adjustments                                                    | Errors that effect outcome of radiograph |

**Beam Angle**

<p>| <strong>Critical:</strong> --For BSA vertical angle directed perpendicular to bisector | --No image distortion                                   | --No more than 4 film show minor image distortion and are diagnostically acceptable | --More than 4 film show major image distortion and are not diagnostically acceptable |
| --For parallel vertical angle directed perpendicular to                 | --No image distortion                                   | -- No more than 4 film show minor image distortion and are diagnostically acceptable | --More than 4 film show major image distortion and |</p>
<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>film and object</strong></td>
<td></td>
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</tr>
<tr>
<td>--For BWX uses positive vertical angle</td>
<td>--No cuspal overlap and equal coronal portions</td>
<td>--No more than 2 film show minor overlap and/or unequal portions but are diagnostically acceptable</td>
<td>--More than 2 film are diagnostically unacceptable</td>
</tr>
<tr>
<td>--Horizontal angle directed between appropriate teeth and parallel with proximal surfaces</td>
<td>--No overlap</td>
<td>--No more than 4 film for PAX and 2 film for BWX show minor overlap and are diagnostically acceptable</td>
<td>--More than 4 film for PAX and 2 film for BWX are diagnostically unacceptable</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Point of Entry**

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> Central ray directed to center of film</td>
<td>--No cone cut or minor</td>
<td>--No more than 4 film for PAX and 2 film for BWX show cone cut and are diagnostically acceptable</td>
<td>More than 4 film for PAX and 2 film for BWX show cone cut and are diagnostically unacceptable</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Panoramic**

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> Not evaluated as critical/noncritical</td>
<td>--Places cassette in drum correctly</td>
<td>--Cassette placed upside down (arrow not to arrow)</td>
<td>--Cassette placed backwards</td>
</tr>
<tr>
<td></td>
<td>--Positions patient accurately</td>
<td>--Minor errors in patient positioning</td>
<td>--Major errors in patient positioning that will give diagnostically unacceptable survey</td>
</tr>
<tr>
<td></td>
<td>--Provides clear, appropriate</td>
<td>--Misses one aspect of</td>
<td>--Fails to give the patient</td>
</tr>
</tbody>
</table>

44
<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>instructions to the patient</td>
<td></td>
<td>instruction to patient</td>
<td>any instruction</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Processing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> Follows</td>
<td>--Radiograph shows no</td>
<td>--No more than 4 film show</td>
<td>--More than 4 film show</td>
</tr>
<tr>
<td>appropriate processing</td>
<td>processing errors</td>
<td>minor processing error and</td>
<td>major processing error and</td>
</tr>
<tr>
<td>procedures</td>
<td></td>
<td>radiograph diagnostically acceptable</td>
<td>radiograph diagnostically acceptable</td>
</tr>
<tr>
<td><strong>Non-critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retakes</strong></td>
<td>No more than 4 retakes for a CRS of 14 film or 2 retakes for BWX survey of 4 film</td>
<td>More than 4 retakes for CRS of 14 film or more than 2 retakes for BWX survey of 4 film</td>
<td></td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> --Records service provided</td>
<td>--Accurately records number and type of exposures including retakes</td>
<td>--Records taking radiographs but inaccurately (i.e. CRS and BWX vs. 14 PAX and 2 BWX)</td>
<td>--Does not record service provided</td>
</tr>
<tr>
<td>--Labels radiographs</td>
<td>--Both sets of mounted radiographs show patient name and date of exposure (if pan label must also show patient name and date of exposure)</td>
<td>--At least one mounted set labeled correctly or date recorded on mount is date of mounting vs. date of exposure</td>
<td>--Radiographs not labeled or incorrect patient name or date of exposure</td>
</tr>
<tr>
<td><strong>Non-critical:</strong> N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>No errors</td>
<td>No more than 4 errors</td>
<td>More than 4 errors</td>
</tr>
<tr>
<td></td>
<td>Meets Standard (3)</td>
<td>Does Not Meet Standard (0)</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------------</td>
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</tr>
<tr>
<td>Radiation Hygiene—(any error = 0)</td>
<td></td>
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<tr>
<td>Input Factors (more than 2 errors = 0)</td>
<td></td>
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<tr>
<td>Uses film holding device correctly (more than 2 errors = 0)</td>
<td></td>
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<tr>
<td>Patient Position—BWX (any error=0)</td>
<td></td>
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<tr>
<td>Film Placement—(more than 2 errors = 0)</td>
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<tr>
<td>Vertical Angle—(more than 2 errors = 0)</td>
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<tr>
<td>Horizontal Angle—(more than 2 errors = 0)</td>
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<tr>
<td>Point of Entry (cone cut)—(more than 2 errors = 0)</td>
<td></td>
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<tr>
<td>Completes exposures in allotted time frame—(if exposures not completed = 0)</td>
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<td></td>
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<tr>
<td>Processing (more than 1 error = 0)</td>
<td></td>
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</tr>
<tr>
<td>Infection Control—(any error = 0)</td>
<td></td>
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</tr>
<tr>
<td>Mounting—(more than 4 errors = 0)</td>
<td></td>
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</tr>
<tr>
<td>Exposure</td>
<td>Film Placement</td>
<td>Cone Placement</td>
<td>Horizontal Angle</td>
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<td>6</td>
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</tr>
</tbody>
</table>

Student must score minimum of 27 to pass lab final and pass the lab portion of the course. Students earning below 26 will not have passed the lab portion of the course and therefore will not pass Den 121-Dental Radiography II. Therefore, if more than 3 criterion areas are not meeting standards you fail the course.

LAB FINAL:121
5/2003
### Dental Studies Program - CRS EVALUATION-121

**STUDENT NAME**  
**PATIENT NAME**  
**DATE OF EXPOSURE**  

<table>
<thead>
<tr>
<th>MAXILLA</th>
<th>Right PM</th>
<th>Can</th>
<th>Inc</th>
<th>Can</th>
<th>Left PM</th>
<th>Mol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
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<tr>
<td>2. Cone Cut</td>
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<tr>
<td>3. Film Placement</td>
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<td>4. Vertical Angle</td>
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<tr>
<td>5. Horizontal Angle</td>
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<table>
<thead>
<tr>
<th>MANDIBLE</th>
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<td>1. Processing</td>
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<td>2. Cone Cut</td>
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<td>3. Film Placement</td>
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<td>4. Vertical Angle</td>
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<td>5. Horizontal Angle</td>
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</tbody>
</table>

See Den 121: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection Control prior to seating patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection Control during exposures</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Infection Control for processing</td>
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<td></td>
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<tr>
<td>Radiation Hygiene</td>
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<td></td>
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<tr>
<td>Input Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armamentarium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Film Placement</td>
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<td>Vertical Angle</td>
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<tr>
<td>Horizontal Angle</td>
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<tr>
<td>Point of Entry</td>
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<tr>
<td>Processing</td>
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<tr>
<td>Retakes</td>
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<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Labeling</td>
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<tr>
<td>Mounting</td>
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</tr>
</tbody>
</table>

**Grades for Technique** (total possible = 5 points; passing = 2.2 points)
1. Major errors = \( \text{minus} .25 \)  
   Retakes = \( \text{minus} .25 \) (1st retake) \( \text{minus} .45 \) (each additional)
2. Minor errors = \( \text{minus}.15 \)  
   Mounting errors = \( \text{minus}.25 \)

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the CRS survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES

If proper procedures are not followed, further points will be deducted and student may receive a grade of “0” for the survey.

**NOTE:** Each category on back must be answered. Points will be deducted for blank categories.
Write a brief summary of the radiographic findings to include the following:

Missing teeth:

Impacted or unerupted:

Restorations: (indicate overhangs/poor contouring and surface)

Pulp changes: (include endo, pulp stones, etc.)

Carious lesion: (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

Calculus: (indicate tooth number and surface)

Bone level: (if not WNL, type and amount of bone loss) location of these:

Crestal changes: (type of change, lamina dura, location of change)

Interradicular bone loss (#’s teeth, incipient/advanced)

Crown Root Ratio:

Periapical radiolucency:

Other: (example – changes in trabecular pattern, supernumerary, blunted apices, etc.)

Radevaluationgrad:121
5/2003
See Den 121: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th>Authorization</th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection Control prior to seating patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infection Control during exposures</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Infection Control for processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiation Hygiene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Film Placement</td>
<td></td>
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<tr>
<td>Vertical Angle</td>
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<tr>
<td>Horizontal Angle</td>
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<tr>
<td>Point of Entry</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
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</tr>
</tbody>
</table>

Grades for Technique (total possible = 5 points; passing = 2.2 points)

1. Major errors = minus .45
2. Minor errors = minus .25
3. Retakes = minus .45
4. Mounting errors = minus .25

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the BWX survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES. If proper procedures are not followed, further points will be deducted and a student may receive a grade of “0” for the survey.

NOTE: Each category on the back must be answered. Points will be deducted for blank categories.
**Bitewing Evaluation**

Write a brief summary of the radiographic findings to include the following:

**Missing teeth:**

**Impacted or unerupted:**

**Restorations:** (indicate overhangs/poor contouring and surface)

**Pulp changes:** (include endo, pulp stones, etc.)

**Carious lesion:** (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

**Calculus:** (indicate tooth number and surface)

**Bone level:** (if not WNL, type and amount of bone loss) Location of these:

**Crestal changes:** (type of change, lamina dura, location of change)

** Interradicular bone loss:** (#’s of teeth, incipient/advanced)

**Other:**

Radbwxevaluation:121
5/2003
## Den 215: Radiography X-Ray Conference Grading

<table>
<thead>
<tr>
<th>Authorization/Histories</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong>--Obtains authorization including type of survey from patient’s dentist or MCC supervising dentist</td>
<td>--Obtains complete authorization and follows authorization request</td>
<td>--N/A</td>
<td>--Does not obtain appropriate authorization or takes inappropriate survey (did not follow authorization request)</td>
</tr>
<tr>
<td>--Thoroughly completes or updates personal, medical and dental histories</td>
<td>--Records follow-up questions appropriately</td>
<td>--N/A</td>
<td>--No follow-up on positive answers or incorrect information recorded</td>
</tr>
<tr>
<td>--Has patient remain until processing and retakes are completed</td>
<td>--All retakes and processing are completed in one appointment</td>
<td>--N/A</td>
<td>--Patient has to return for retakes</td>
</tr>
</tbody>
</table>

## Infection Control

<table>
<thead>
<tr>
<th><strong>Critical:</strong>-- Uses appropriate infection control procedures prior to seating patient</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>--Using appropriate solution wipes the x-ray arm, yoke, tubehead, BID, headrest, chair (seat and arm), leaded apron and thyroid collar and cabinet tops. Places blue barrier wrap on control panel</td>
<td>--N/A</td>
<td>--Errors that do not follow protocol for appropriate infection control</td>
</tr>
<tr>
<td>--Uses appropriate infection control procedures during x-ray exposure</td>
<td>--Places unexposed film in one area and exposed film in cup</td>
<td>--N/A</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>--Uses appropriate infection</td>
<td>--N/A</td>
<td>--N/A</td>
</tr>
<tr>
<td>control procedures for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Upon completing exposures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>removes exam gloves, washes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hands, places on overgloves,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>takes new exam gloves, cup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with exposed film and two</td>
<td></td>
<td></td>
</tr>
<tr>
<td>additional cups to processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>area. Uses new exam gloves for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>opening film packets. When</td>
<td></td>
<td></td>
</tr>
<tr>
<td>last packet opened, removes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gloves placing in waste cup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and places film through</td>
<td></td>
<td></td>
</tr>
<tr>
<td>processor or on rack with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bare hands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Errors that do not follow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>protocol for appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>infection control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Errors that do not follow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>protocol for appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>infection control or incorrect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>care or packaging of x-ray</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aiming device</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Non-critical: N/A**

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Radiation Hygiene</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-ray film is placed behind</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>protective barrier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--X-ray film behind protective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>barrier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Errors that do not follow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>protocol for appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>infection control or incorrect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>care or packaging of x-ray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aiming device</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Film not behind protective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>barrier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>barrier</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>--Uses lead shielding</td>
<td>--Uses lead shielding for both intraoral (including thyroid collar) and extraoral</td>
<td>--N/A</td>
<td>--Absence of lead shielding</td>
</tr>
<tr>
<td>--Stands behind protective barrier during exposure</td>
<td>--Stands behind protective barrier during exposure</td>
<td>--N/A</td>
<td>--Is not behind protective barrier during exposure</td>
</tr>
<tr>
<td>--Depresses exposure button and holds until exposure complete</td>
<td>--Accurately activates exposure button</td>
<td>--N/A</td>
<td>--Fails to depress exposure button for full duration of exposure</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>

**Input Factors**

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Selects adult or child</td>
<td>No errors</td>
<td>--N/A</td>
<td>--Incorrect selection (A/C)</td>
</tr>
<tr>
<td>-Selects correct exposure site</td>
<td>Correct exposure site selected</td>
<td>--N/A</td>
<td>--Incorrect exposure site</td>
</tr>
<tr>
<td><strong>Non-critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes input factors prior to film placement</td>
<td>Completes input factors prior to film placement</td>
<td>Completed input factors after film placement</td>
<td>Did not select input factors</td>
</tr>
</tbody>
</table>

**Armamentarium**

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Correctly assembles anterior and posterior aiming devices for parallel technique</td>
<td>No errors</td>
<td>--N/A</td>
<td>Incorrectly assembles armamentarium</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
<td><strong>N/A</strong></td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>-------------------------</td>
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<td>------------------------</td>
</tr>
<tr>
<td><strong>Film Placement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical: --Film packet placed tubeside</td>
<td>--Film tubeside</td>
<td>--N/A</td>
<td>--film packet not placed tubeside</td>
</tr>
<tr>
<td>--Places film over area to be exposed</td>
<td>--Film placed correctly over the area to be exposed</td>
<td>--Film placed over area to be exposed but not in proper position (no more than 3 errors)</td>
<td>--More than 3 film not placed over area to be exposed</td>
</tr>
<tr>
<td>--For periapical exposures raised dot toward incisal/occlusal</td>
<td>--Raised dot placed correctly</td>
<td>--Film tube side but raised dot apical (no more than 2 errors)</td>
<td>--More than 2 errors of raised dot placed incorrectly</td>
</tr>
<tr>
<td>--(Parallel) film parallel as possible to object</td>
<td>--No errors</td>
<td>--Minor error (no more than 3 errors) and film diagnostically acceptable</td>
<td>--More than 3 film placed incorrectly and diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical: N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

| **Patient Position/BWX** |                |                        |                        |
| Critical: Maxillary occlusal plane parallel and sagittal plane perpendicular to floor | No errors | No more than 2 exposures show 10 degree chin tilt up or down from horizontal plane | More than 2 exposures have more than a 10 degree chin tilt from horizontal plane |
| Non-critical: Patient too high or too low | Appropriate patient position | Patient needs minor adjustments | Errors that effect outcome of radiograph |

<p>| <strong>Beam Angle</strong>          |                |                        |                        |
| Critical: --For BSA vertical angle directed perpendicular to bisector | --No image distortion | --No more than 3 film show minor image distortion but diagnostically acceptable | --More than 3 film show major image distortion and not diagnostically acceptable |</p>
<table>
<thead>
<tr>
<th>Standard</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>--For parallel vertical angle directed perpendicular to film and object</td>
<td>--No image distortion</td>
<td>--No more than 3 film show minor image distortion but diagnostically acceptable</td>
<td>--More than 3 film show major image distortion and not diagnostically acceptable</td>
</tr>
<tr>
<td>--For BWX uses positive vertical angle</td>
<td>--No cuspal overlap and equal coronal portions</td>
<td>--No more than 2 film show minor overlap and/or unequal portions but diagnostically acceptable</td>
<td>--More than 2 film are diagnostically unacceptable</td>
</tr>
<tr>
<td>--Horizontal angle directed between appropriate teeth and parallel with proximal surfaces</td>
<td>--No overlap</td>
<td>--No more than 3 film for PAX and 2 film for BWX show minor overlap and diagnostically acceptable</td>
<td>--More than 3 film for PAX and 2 film for BWX are diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical: N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Point of Entry**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical: Central ray directed to center of film</td>
<td>--No cone cut or minor</td>
<td>--No more than 3 film for PAX and 2 film for BWX show cone cut and are diagnostically acceptable</td>
<td>More than 3 film for PAX and 2 film for BWX show cone cut and are diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical: N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Panoramic Survey**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical: --Cassette placed in drum correctly</td>
<td>--Places cassette in drum correctly</td>
<td>--Cassette placed upside down (arrow not to arrow)</td>
<td>--Cassette placed backwards</td>
</tr>
<tr>
<td>--Correct input factors for adult or child and kv are selected</td>
<td>--Selects correct input factors</td>
<td>--Input factor for adult or child correct but kv incorrect (film too dark or too light)</td>
<td>--Did not select correct input for adult or child</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>--All radiodense objects removed</td>
<td>--Has patient remove all radiodense objects</td>
<td>--N/A</td>
<td>--Does not have patient remove all radiodense objects</td>
</tr>
<tr>
<td>--Positions patient with Frankfort plane parallel and sagittal plane perpendicular to the floor</td>
<td>--Positions patient accurately</td>
<td>--Minor errors in patient positioning and film diagnostically acceptable</td>
<td>--Major errors in patient positioning that will give diagnostically unacceptable survey</td>
</tr>
<tr>
<td>--Positions patient’s teeth in grooves of block</td>
<td>--Teeth positioned accurately in block</td>
<td>--Minor error in positioning of teeth and film diagnostically acceptable</td>
<td>--Major error and film diagnostically unacceptable</td>
</tr>
<tr>
<td>--Patient stands still, closes lips around block, places tongue to palate, swallows and holds tongue in position until unit stops</td>
<td>--Provides clear, appropriate instructions to the patient</td>
<td>--Misses one aspect of instruction to patient</td>
<td>--More than 2 errors in instruction (radiolucency of anteriors from failure to close lips on block and radiolucency of palatoglossal airspace from failure to keep tongue to palate)</td>
</tr>
<tr>
<td><strong>Processing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> Follows appropriate processing procedures</td>
<td>--Radiograph shows no processing errors</td>
<td>--No more than 3 film show minor processing error but radiograph diagnostically acceptable</td>
<td>--More than 3 processing errors and/or radiograph diagnostically unacceptable</td>
</tr>
<tr>
<td><strong>Non-critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Retakes</strong></td>
<td>No more than 3 retakes for a CRS of 14 film or 2 retakes for BWX survey of 4 film</td>
<td></td>
<td>More than 3 retakes for a CRS of 14 film or 2 retakes for BWX survey of 4 film or pan retake</td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong> --Records service provided</td>
<td>--Accurately records number and type of exposures including retakes</td>
<td>-- N/A</td>
<td>--Does not record service provided or records incorrectly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Labels radiographs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Both sets of mounted radiographs show patient name and date of exposure (if pan label must also show patient name and date of exposure)</td>
<td>--N/A</td>
<td>--Radiographs not labeled or incorrect patient name or date of exposure</td>
</tr>
<tr>
<td><strong>Non-critical:</strong> N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>No more than 2 errors</td>
<td></td>
<td>More than 2 errors</td>
</tr>
<tr>
<td><strong>Interpretation</strong></td>
<td>Follows directions and answers are complete</td>
<td>No more than half the answers are inaccurate or incomplete</td>
<td>More than half the answers are inaccurate or incomplete</td>
</tr>
</tbody>
</table>
### CRS EVALUATION—215/225

**MONROE COMMUNITY COLLEGE**  
**Dental Studies Program**

**PATIENT NAME__________________  DATE OF EXPOSURE _____________**  
**STUDENT NAME _________________ DATE OF EVALUATION____________**

<table>
<thead>
<tr>
<th></th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXILLA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Vertical Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Horizontal Angle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MANDIBLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Vertical Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Horizontal Angle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Film Placement</td>
<td></td>
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<tr>
<td>Vertical Angle</td>
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<td></td>
<td></td>
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<tr>
<td>Horizontal Angle</td>
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<td></td>
</tr>
<tr>
<td>Point of Entry</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Labeling</td>
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<td></td>
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<tr>
<td>Mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**TECHNIQUE GRADE:**

Grades for Technique (total possible = 5 points; passing = 2.2 points)

1. Major errors = minus .25
2. Minor errors = minus .15
3. Retakes = minus .25 (1st retake) minus .45 (each additional)
4. Mounting errors = minus .25

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the CRS survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES

If proper procedures are not followed, points will be deducted and student may receive a grade of “0” for the set. NOTE: Each category on back must be answered. Points will be deducted for blank categories.
Write a brief summary of the radiographic findings to include the following:

**Missing teeth:**

**Impacted or unerupted:**

**Restorations:** (indicate overhangs/poor contouring and surface)

**Pulp changes:** (include endo, pulp stones, etc.)

**Carious lesion:** (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

**Calculus:** (indicate tooth number and surface)

**Bone level:** (if not WNL, type and amount of bone loss) location of these:

**Crestal changes:** (type of change, lamina dura, location of change)

**Interradicular bone loss (#’s teeth, incipient/advanced)**

**Crown Root Ratio:**

**Periapical radiolucency:**

**Other:** (example – changes in trabecular pattern, supernumerary, blunted apices, etc.)
Bitewing Evaluation—215/225

<table>
<thead>
<tr>
<th>STUDENT ______________________________</th>
<th>Date of Exposure ________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT ______________________________</td>
<td>Date of Evaluation ______________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Rt. Molar</th>
<th>Rt. PM</th>
<th>Lt. PM</th>
<th>Lt. Molar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
<td></td>
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</tr>
<tr>
<td>4. Horizontal Angulation</td>
<td></td>
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<tr>
<td>5. Vertical Angulation</td>
<td></td>
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</tr>
</tbody>
</table>

See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th>Authorization</th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film Placement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Angle</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Point of Entry</td>
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<tr>
<td>Retakes</td>
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<td></td>
<td></td>
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<tr>
<td>Processing</td>
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<tr>
<td>Documentation</td>
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<td>Labeling</td>
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<td></td>
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<tr>
<td>Mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TECHNIQUE GRADE:**

Grades for Technique (total possible = 5 points; passing = 2.2 points)

1. Major errors = \textit{minus} .45
2. Minor errors = \textit{minus}.25
3. Retakes = \textit{minus}.45
4. Mounting errors = \textit{minus}.25

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the BWX survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more than 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES.

If proper procedures are not followed, further points will be deducted and a student may receive a grade of “0” for the survey.

**NOTE:** Each category on the back must be answered. Points will be deducted for blank categories.
Bitewing Evaluation

Write a brief summary of the radiographic findings to include the following:

Missing teeth:

Impacted or unerupted:

Restorations: (indicate overhangs/poor contouring and surface)

Pulp changes: (include endo, pulp stones, etc.)

Carious lesion: (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

Calculus: (indicate tooth number and surface)

Bone level: (if not WNL, type and amount of bone loss) Location of these:

Crestal changes: (type of change, lamina dura, location of change)

Interradicular bone loss (#’s of teeth, incipient/advanced)

Other:
1. Note any patient positioning errors, technique errors and processing errors.

2. Note if any of the following shadows or artifacts are evident. Check appropriate category.

<table>
<thead>
<tr>
<th>SHADOW/ARTIFACT</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertebral Column</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submandibular Shadow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft Palate and Uvula</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatoglossal Air Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasopharyngeal Air Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glossopharyngeal Air Space</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Note any “changes from the norm.” Place a check mark in the appropriate category.

<table>
<thead>
<tr>
<th>Area</th>
<th>No Change</th>
<th>Change Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortical rim around the right condylar head (intact or not intact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right ramus, around inferior border of mandible to left ramus (fractures)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left condylar cortical rim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronoid process (height)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandibular alveolar bone (trabecular pattern)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zygomatic arch (intact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxillary sinus (symmetry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal septum and fossa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxillary Alveolar Bone (trabecular pattern)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Identify the possibility and location of any carotid calcifications.

5. Other Findings (missing, impacted, etc.)
See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard 3</th>
<th>Moving Toward Standard 2</th>
<th>Does Not Meet Standard 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassette Placement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input-Adult/Child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiodense Objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frankfort Plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sagittal Plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teeth in Grooves of block</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lips closed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tongue to palate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retakes</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Grade** (total possible = 5 points; passing = 2.2 points)

**Grade for technique**

1. Major error = minus .45
2. Minor error = minus .25
3. Retakes = minus 1.0 (1st retake); minus 2.0 (each additional)
4. Labeling = minus .45

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

If proper procedures are not followed, points will be deducted and student may receive a grade of “0” for the survey.

Grade for Interpretation: minus .15 for each error and/or for not answering a category.
### Den 225: Radiography X-Ray Conference Grading

<table>
<thead>
<tr>
<th>Authorization/Histories</th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong>--Obtains authorization including type of survey from patient’s dentist or MCC supervising dentist</td>
<td>--Obtains complete authorization and follows authorization request</td>
<td>--N/A</td>
<td>--Does not obtain appropriate authorization or takes inappropriate survey (did not follow authorization request)</td>
</tr>
<tr>
<td>--Thoroughly completes or updates personal, medical and dental histories</td>
<td>--Records follow-up questions appropriately</td>
<td>--N/A</td>
<td>--No follow-up on positive answers or incorrect information recorded</td>
</tr>
<tr>
<td>--Has patient remain until processing and retakes are completed</td>
<td>--All retakes and processing are completed in one appointment</td>
<td>--N/A</td>
<td>--Patient has to return for retakes</td>
</tr>
</tbody>
</table>

### Infection Control

<table>
<thead>
<tr>
<th>Critical:-- Uses appropriate infection control procedures prior to seating patient</th>
<th>--Using appropriate solution wipes the x-ray arm, yoke, tubehead, BID, headrest, chair (seat and arm), leaded apron and thyroid collar and cabinet tops. Places blue barrier wrap on control panel</th>
<th>--N/A</th>
<th>--Errors that do not follow protocol for appropriate infection control</th>
</tr>
</thead>
<tbody>
<tr>
<td>--Uses appropriate infection control procedures during x-ray exposure</td>
<td>--Places unexposed film in one area and exposed film in cup</td>
<td>--N/A</td>
<td>--Errors that do not follow protocol for appropriate infection control</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Radiation Hygiene**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical:</strong> X-ray film is placed behind protective barrier</td>
<td>--X-ray film behind protective barrier</td>
<td>N/A</td>
<td>--Film not behind protective barrier</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>barrier</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-- Uses lead shielding</td>
<td>--Uses lead shielding for both intraoral (including thyroid collar) and extraoral</td>
<td>--N/A</td>
<td>--Absence of lead shielding</td>
</tr>
<tr>
<td>-- Stands behind protective barrier during exposure</td>
<td>--Stands behind protective barrier during exposure</td>
<td>--N/A</td>
<td>--Is not behind protective barrier during exposure</td>
</tr>
<tr>
<td>-- Depresses exposure button and holds until exposure complete</td>
<td>--Accurately activates exposure button</td>
<td>--N/A</td>
<td>--Fails to depress exposure button for full duration of exposure</td>
</tr>
<tr>
<td><strong>Non-critical: N/A</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Input Factors**

|                                |                |                        |                        |
| **Critical:**                  |                |                        |                        |
| - Selects adult or child       | No errors      | --N/A                  | --Incorrect selection (A/C) |
| - Selects correct exposure site| Correct exposure site selected | --N/A                  | --Incorrect exposure site |
| **Non-critical:**              |                |                        |                        |
| Completes input factors prior to film placement | Completes input factors prior to film placement | --N/A                  | --Completes input factors after film placement |

**Armamentarium**

<p>| | | | |
|                                |                |                        |                        |
| <strong>Critical:</strong>                  |                |                        |                        |
| -- Correctly assembles anterior and posterior aiming devices for parallel technique | No errors | --N/A                  | Incorrectly assembles armamentarium |
| <strong>Non-critical: N/A</strong>          | N/A            | N/A                    | N/A                    |</p>
<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Film Placement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Critical:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Film packet placed tubeside</td>
<td>--Film tubeside</td>
<td>--N/A</td>
<td>--film packet not placed tubeside</td>
</tr>
<tr>
<td>--Places film over area to be exposed</td>
<td>--Film placed correctly over the area to be exposed</td>
<td>--No more than 2 film placed over area to be exposed are not in proper position</td>
<td>--More than 2 film not placed over area to be exposed</td>
</tr>
<tr>
<td>--For periapical exposures raised dot toward incisal/occlusal</td>
<td>-- Raised dot placed correctly</td>
<td>--Film tubeside but raised dot apical (No more than 2 film)</td>
<td>--More than 2 errors of raised dot placed incorrectly</td>
</tr>
<tr>
<td>--(Parallel) film parallel as possible to object</td>
<td>--No errors</td>
<td>--No more than 2 film show minor error and film diagnostically acceptable</td>
<td></td>
</tr>
<tr>
<td><strong>Non-critical:</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

| **Patient Position/BWX**         |                |                        |                        |
| **Critical:**                    |                |                        |                        |
|  --Maxillary occlusal plane parallel and sagittal plane perpendicular to floor | No errors | No more than 1 film shows 10 degree chin tilt up or down from horizontal plane | More than 1 exposure has more than a 10 degree chin tilt from horizontal plane |
| **Non-critical:**                |                |                        |                        |
|  --Patient too high or too low   | Appropriate patient position | --N/A                  | --Errors that make film diagnostically unacceptable |

<p>| <strong>Beam Angle</strong>                   |                |                        |                        |
| <strong>Critical:</strong>                    |                |                        |                        |
|  --For BSA vertical angle directed perpendicular to bisector | --No image distortion | --No more than 2 film show minor image distortion but diagnostically acceptable | --More than 2 film show image distortion and not diagnostically acceptable |</p>
<table>
<thead>
<tr>
<th></th>
<th>Meets Standard</th>
<th>Moving Toward Standard</th>
<th>Does not Meet Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>directed perpendicular to</td>
<td>--No image distortion</td>
<td>--No more than 2 film show minor image distortion but diagnostically acceptable</td>
<td>--More than 2 film show image distortion and not diagnostically acceptable</td>
</tr>
<tr>
<td>film and object</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--For BWX uses positive</td>
<td>--No cuspal overlap and equal coronal portions</td>
<td>--No more than 1 film shows minor overlap and/or unequal portions but diagnostically acceptable</td>
<td>--More than 1 film is diagnostically unacceptable</td>
</tr>
<tr>
<td>vertical angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Horizontal angle directed between appropriate teeth and parallel with proximal surfaces</td>
<td>--No overlap</td>
<td>--No more than 2 film for PAX and 1 film for BWX show minor overlap and are diagnostically acceptable</td>
<td>--More than 2 film for PAX and 1 film for BWX are diagnostically unacceptable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-critical: N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical: Central ray directed to center of film</td>
<td>--No cone cut or minor</td>
<td>--No more than 2 film for PAX and 1 film for BWX show cone cut and are diagnostically acceptable</td>
<td>More than 2 film for PAX or 1 film for BWX show cone cut and are diagnostically unacceptable</td>
</tr>
<tr>
<td>Non-critical: N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Panoramic Survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical: --Cassette placed in drum correctly</td>
<td>--Places cassette in drum correctly</td>
<td>--N/A</td>
<td>--Cassette placed backwards or upside down (arrow not to arrow)</td>
</tr>
<tr>
<td>--Correct input factors for adult or child and kv are selected</td>
<td>--Selects correct input factors</td>
<td>--N/A</td>
<td>--Did not select correct input for adult or child or film too</td>
</tr>
<tr>
<td></td>
<td>Meets Standard</td>
<td>Moving Toward Standard</td>
<td>Does not Meet Standard</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>--All radiodense objects</td>
<td>--Has patient remove all radiodense objects</td>
<td>--N/A</td>
<td>dark or light</td>
</tr>
<tr>
<td>removed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Positions patient with</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frankfort plane parallel and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sagittal plane perpendicular</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to the floor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Positions patient’s teeth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in grooves of block</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--Patient stands still, closes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lips around block, places</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tongue to palate, swallow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and holds tongue in position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>until unit stops</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Processing</td>
<td>Critical:</td>
<td>Non-critical:</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follows appropriate processing procedures</td>
<td>--Radiograph shows no processing errors</td>
<td>--More than 2 film show minor processing error but radiograph diagnostically acceptable</td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td>No more than 2 retakes for PAX of 14 film or 1 retake for BWX of 4 film</td>
<td>More than 2 retakes for PAX of 14 film or 1 retake for BWX of 4 film or retake on pan</td>
</tr>
<tr>
<td>Documentation</td>
<td>Critical:</td>
<td>Non-critical:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Records service provided</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Labels radiographs</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Accurately records number and type of exposures including retakes</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Both sets of mounted radiographs show patient name and date of exposure (if pan label must also show patient name and date of exposure)</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Does not record service provided or records incorrectly</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>--Radiographs not labeled or incorrect patient name or date of exposure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td>No errors</td>
<td>Errors in mounting</td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td>Accurately interprets findings with minor errors</td>
<td>Inaccurately interprets findings (has major errors such as not recognizing obvious decay, calculus and inaccurately describes bone)</td>
<td></td>
</tr>
</tbody>
</table>
MONROE COMMUNITY COLLEGE
Dental Studies Program - CRS EVALUATION—215/225

STUDENT NAME

PATIENT NAME

DATE OF EXPOSURE

<table>
<thead>
<tr>
<th></th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXILLA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Vertical Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Horizontal Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANDIBLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Vertical Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Horizontal Angle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Film Placement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point of Entry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Grades for Technique** (total possible = 5 points; passing = 2.2 points)

1. Major errors = \textit{minus} .25
2. Minor errors = \textit{minus} .15
3. Retakes = \textit{minus} .25 (1\textsuperscript{st} retake) \textit{minus} .45 (each additional)
4. Mounting errors = \textit{minus} .25

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the CRS survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES
If proper procedures are not followed, points will be deducted and student may receive a grade of “0” for the set. NOTE: Each category on back must be answered. Points will be deducted for blank categories.
CRS EVALUATION

Write a brief summary of the radiographic findings to include the following:

Missing teeth:

Impacted or unerupted:

Restorations: (indicate overhangs/poor contouring and surface)

Pulp changes: (include endo, pulp stones, etc.)

Carious lesion: (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

Calculus: (indicate tooth number and surface)

Bone level: (if not WNL, type and amount of bone loss) location of these:

Crestal changes: (type of change, lamina dura, location of change)

Interradicular bone loss (#’s teeth, incipient/advanced)

Crown Root Ratio:

Periapical radiolucency:

Other: (example – changes in trabecular pattern, supernumerary, blunted apices, etc.)
MONROE COMMUNITY COLLEGE
Dental Studies Program - Bitewing Evaluation—215/225

STUDENT NAME ___________________________ PATIENT NAME ___________________________ DATE OF EXPOSURE ___________________________

<table>
<thead>
<tr>
<th></th>
<th>Rt. Molar</th>
<th>Rt. PM</th>
<th>Lt. PM</th>
<th>Lt. Molar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Cone Cut</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Film Placement</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4. Horizontal Angulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Vertical Angulation</td>
<td></td>
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</tr>
</tbody>
</table>

See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard (3)</th>
<th>Moving Toward Standard (2)</th>
<th>Not Meeting Standard (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Film Placement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizontal Angle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point of Entry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grades for Technique (total possible = 5 points; passing = 2.2 points)

1. Major errors = minus .45  
2. Minor errors = minus .25  
3. Retakes = minus .45  
4. Mounting errors = minus .25

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the BWX survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

Refer to “Radiography Manual” – RADIOGRAPHIC PROCEDURES. If proper procedures are not followed, further points will be deducted and a student may receive a grade of “0” for the survey.

NOTE: Each category on the back must be answered. Points will be deducted for blank categories.
**Bitewing Evaluation**

Write a brief summary of the radiographic findings to include the following:

Missing teeth:

Impacted or unerupted:

Restorations: (indicate overhangs/poor contouring and surface)

Pulp changes: (include endo, pulp stones, etc.)

Carious lesion: (indicate tooth number, surface involved and whether incipient, moderate, advanced or severe)

Calculus: (indicate tooth number and surface)

Bone level: (if not WNL, type and amount of bone loss) Location of these:

Crestal changes: (type of change, lamina dura, location of change)

Interradicular bone loss (#’s of teeth, incipient/advanced)

Other:
PANORAMIC EVALUATION

PATIENT NAME ___________________ DATE OF EXPOSURE _____________

STUDENT NAME ___________________ DATE OF EVALUATION ______________

1. Note any patient positioning errors, technique errors and processing errors.

2. Note if any of the following shadows or artifacts are evident. Check appropriate category.

<table>
<thead>
<tr>
<th>SHADOW/ARTIFACT</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertebral Column</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submandibular Shadow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft Palate and Uvula</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palatoglossal Air Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasopharyngeal Air Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glossopharyngeal Air Space</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Note any “changes from the norm.” Place a check mark in the appropriate category.

<table>
<thead>
<tr>
<th>Area</th>
<th>No Change</th>
<th>Change Noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortical rim around the right condylar head (intact or not intact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right ramus, around inferior border of mandible to left ramus (fractures)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left condylar cortical rim</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronoid process (height)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandibular alveolar bone (trabecular pattern)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zygomatic arch (intact)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxillary sinus (symmetry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal septum and fossa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxillary Alveolar Bone (trabecular pattern)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Identify the possibility and location of any carotid calcifications.

5. Other Findings (missing, impacted, etc.)
See Den 215/225: Radiography Lab Grading Criteria for the following:

<table>
<thead>
<tr>
<th></th>
<th>Meets Standard 3</th>
<th>Moving Toward Standard 2</th>
<th>Does Not Meet Standard 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cassette Placement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input-Adult/Child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiodense Objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frankfort Plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sagittal Plane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teeth in Grooves of block</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lips closed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tongue to palate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retakes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labeling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Grade** (total possible = 5 points; passing = 2.2 points)

**Grade for technique**

6. Major error = \(\text{minus} \ 0.45\)  
7. Minor error = \(\text{minus} \ 0.25\)  
8. Retakes = \(\text{minus} \ 1.0 \ (1^{st} \text{ retake}); \text{minus} \ 2.0 \ (\text{each additional})\)  
9. Labeling = \(\text{minus} \ 0.45\)

For each area not meeting standards minus one (1) will be deducted from the grade. For example, if the survey grade is 4.75 one area not meeting standard will make grade 3.75, two areas not meeting standard will make grade 2.75, etc. If more then 4 areas are noted as not meeting standard the grade for the survey is a “0”.

If proper procedures are not followed, points will be deducted and student may receive a grade of “0” for the survey.

Grade for Interpretation: \(\text{minus} \ 0.15\) for each error and/or for not answering a category.

New pan evaluation: 215