



**CAMOSUN COLLEGE**  
**School of Health & Human Services**  
**Dental Programs**

**DHYG 230 Radiology 2**  
**Fall 2012**

**COURSE OUTLINE**

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The Approved Course Description is available on the web @

<http://camosun.ca/learn/calendar/current/web/dhyg.html>

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Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records.

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**1. Instructor Information**

(a) Instructor	Melissa Schaefer
(b) Office hours	Posted on door
(c) Location	DNTL 003
(d) Phone	370-3193 <b>Alternative:</b> 370-1344
(e) E-mail	<a href="mailto:schaefer@camosun.bc.ca">schaefer@camosun.bc.ca</a>
(f) Website	na

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**2. Course Description and Particulars**

This course expands on the basic radiology concepts from Radiology 1 and focuses on interpretation of oral radiographs. Concepts, principles and applications of advanced and specialized radiography techniques are also discussed.

Prerequisites: "B-" in DHYG 125, DHYG 126, DHYG 130, DHYG 162  
Co-requisite: DHYG 260

Credits: 1.5  
In class hours: 1.5 hours per week x 14 weeks  
Out of class hours: 1.5 hours per week

**3. Required Materials**

(a) Texts Required :

- Dental Radiography, Principles and Techniques, 4<sup>th</sup> ed., Iannucci, Joen M. & Howerton, Laura Jansen. Elsevier Saunders, St. Louis. 2012
- Oral Pathology: Clinical Pathological Correlations, 5<sup>th</sup> ed., Regezi, J.A., Scuibba, J.J., Saunders Elsevier. St. Louis, 2008.
- Carranza's Clinical Periodontology, 11<sup>th</sup> ed., Newman, Takei, Klokkevold, Carranza. Saunders, 2012

(b) Other: DHYG 230 Radiology- 2 Course Manual, Camosun College Bookstore, 2012

## 4. Intended Learning Outcomes

Learning Outcomes	Program Outcomes
<ol style="list-style-type: none"> <li>1. Recall and apply concepts and principles of radiation biology, x-radiation production, radiation protection standards, film processing and film mounting and radiographic techniques from DHYG 130 Radiology-1</li> <li>2. Describe and apply concepts dealing with legal and ethical issues of dental radiography.</li> <li>3. Interpret dental radiographic images.</li> <li>4. Understand and apply concepts, principles and applications of specialized and advanced radiography techniques and radiographic imaging.</li> </ol>	<ol style="list-style-type: none"> <li>1. <i>Function as a professional dental hygienist.</i></li> <li>2. <i>Communicate and collaborate effectively with individuals, family, community and interdisciplinary teams.</i></li> <li>3. <i>Demonstrate critical thinking and use evidence based decision-making to provide optimal dental hygiene services to individuals, families and community.</i></li> <li>4. <i>Advocate improving oral health and access to oral health services for individuals, families and community.</i></li> <li>5. <i>Coordinate and contribute to the effective management of the practice environment to ensure quality care and services.</i></li> <li>6. <i>Function as a competent clinician using the dental hygiene process of care.</i></li> <li>7. <i>Educate individuals, families and community about oral health including its relationship to general health.</i></li> <li>8. <i>Apply health promotion principles to improve the health of individuals, families and community.</i></li> </ol>

## 4. Course Content

Elements:

1. Recall and apply concepts and principles of radiation biology, x-radiation production, radiation protection standards, film processing and film mounting and radiographic techniques from DHYG 130 Radiology-1.
  - 1.1 Recall concepts and principles of radiation biology, x-radiation production, radiation protection standards, film processing and film mounting and radiographic techniques from DHYG 130.
    - Recall the rationale and methodology for the paralleling periapical radiographic technique and bitewings radiographs (from DHYG 130).
    - Recall the principles, concepts, characteristics, indications and limitations of the bisecting angle periapical technique (from DHYG 130).
2. Describe and apply concepts dealing with legal and ethical issues of dental radiography.
  - 2.1 Identify information required to determine the need for radiographs.
  - 2.2 Describe the main legal and ethical issues related to dental radiography.
  - 2.3 Describe quality assurance and risk management issues related to oral radiography.
  - 2.4 Explain "informed consent" as it relates to oral radiographs and describes issues related to informed consent.
  - 2.5 Define the client's and dentist's ownership rights of radiographic records.
  - 2.6 Describe the use of radiographs in forensic dentistry.

### 3. Interpret dental radiographic images.

3.1 Define and differentiate between "diagnosis" and "interpretation" as they pertain to dental radiographs.

3.2 Describe and apply correct descriptive terminology in interpreting radiographs

3.3 Recall knowledge of normal soft and hard tissue radiographic landmarks on a full-mouth set of radiographs (paralleling technique) (from DHYG 130).

3.4 Describe the radiographic appearance of anatomic variations that mimic pathology.

- Describe, radiographically, normal variations to anatomic landmarks including foramina, sinuses, trabecular patterns, etc.
- Describe, radiographically, the appearance of primary tooth root resorption and incompletely formed apices.
- Identify, radiographically, normal anatomic variations.

3.5 Discuss a systematic method for interpreting radiographs.

- Describe how to use the problem-solving process to distinguish normal from abnormal conditions.
- Given a full-mouth set of radiographs, systematically review the films, interpreting all normal images and identifying the presence of abnormalities including artifacts and processing errors.
- Given a radiograph with an abnormal image, interpret the image, using the problem-solving process.

3.6 Describe and interpret the radiographic appearance of dental restorations and dental restorative materials.

- List dental materials that are radiopaque and radiolucent.
- Discuss the benefits and limitations of radiographs for obtaining specific restorative details.
- Describe the radiographic appearance of bands and appliances related to orthodontics.
- Identify radiographically, dental restorations and materials as accurately as possible.

3.7 Describe and interpret the radiographic appearance of dental caries.

- Recall knowledge of caries (from DHYG 230).
- Describe radiographic classification of dental caries.
- Describe the limitation of using radiographs to diagnose dental caries.
- Describe conditions or effects that imitate caries on radiographs including their appearance and significance.
- Describe the radiographic appearance of occlusal, interproximal, recurrent and root caries.
- Identify radiographically, indications of possible dental caries.

3.8 Describe and interpret the radiographic appearance of periodontal conditions.

- Recall the relationship of the height of normal crestal bone to the CEJ (from DHYG 121).
- Describe the radiographic appearance of changes that occur in response to periodontal disease: crestal bone abnormalities, horizontal and vertical bone loss, local irritants including overhangs and calculus spurs, furcations and interdental bone.
- Identify radiographically, all periodontal abnormalities.

### 3.9 Discuss the radiographic appearance of pulpal and periapical conditions.

- Recall knowledge of pulpal pathologies (from DHYG 126)..
- Describe the radiographic appearance of pulp stones and other pulp calcification.
- Describe the radiographic appearance of pathological root resorption, ankylosis and hypercementosis.
- Describe the appearance of radiographic changes due to trauma or fractures
- Describe the radiographic appearance of pulp death, periapical abscess and periapical granuloma.
- Describe changes that occur to the periodontal ligament and lamina dura in response to pulpal pathology.
- Identify radiographically, obvious changes due to trauma, as well as pulpal and periapical abnormalities.

### 3.10 Describe the radiographic appearance of oral pathologies.

- Describe the radiographic appearance of various types of cysts, and tumors, osteosclerosis and osteomyelitis.
- Identify radiographically, the existence of obvious pathology.

### 3.11 Discuss the radiographic appearance of developmental and acquired disturbances of the teeth.

- Recall knowledge of developmental disturbances of the teeth (from DHYG 121& DHYG 126).
- Describe, radiographically, variations in tooth morphology including microdontia, macrodontia, gemination, fusion, concrescence, supernumerary roots, taurodontia, dens in dente and enamel pearls.
- Describe, radiographically, variations in numbers of teeth including anodontia, hypodontia, supernumeraries and mesiodens.
- Describe, radiographically, variations in tooth structure including enamel hypoplasia, amelogenesis imperfecta and dentinogenesis imperfecta.
- Describe, radiographically, variations in eruption including drift, migration, impaction and delayed eruption.
- Describe, radiographically, variations of the jaws including tori.
- Describe, radiographically, acquired variations including attrition, abrasion, erosion, retained roots, extraction sites, amalgam tattoos and foreign bodies.
- Identify/interpret, radiographically, developmental and acquired disturbances of the teeth.

## 4. Understand and apply concepts, principles and applications of specialized and advanced radiography techniques and radiographic imaging.

### 4.1 Discuss specialized intra-oral radiographic techniques.

- Describe the principles, concepts, methods, indications and limitations of occlusal radiographs.
- Describe radiographic techniques for edentulous clients.
- Describe modifications to radiographic techniques for children.
- Describe radiographic techniques used for endodontics.
- Describe modifications to radiographic techniques that may be required for clients with special medical, physical or intra-oral needs.
- Describe methods used to localize abnormal radiographic findings, including the Buccal Object Rule.
- Describe the disto-molar technique for taking radiographs on third molars.

- 4.2 Discuss extra-oral and panoramic radiography.
- Describe cassettes and film used for extra-oral radiographs.
  - Describe uses of extra-oral radiographs in dentistry.
  - Describe the purpose and technique of lateral jaw radiographs, cephalometric radiographs and temporomandibular joint radiographs.
  - Describe the principles, concepts, indications and limitations of panoramic radiographs.
- 4.3 Discuss alternate imaging modalities as they are used in dentistry.
- Discuss reasons for the development of alternate imaging techniques other than conventional radiography.
  - Describe and discuss the use of the following techniques as they are used in dentistry. contrast media (angiography, sialography, etc.), computerized tomography, subtraction techniques, ultrasound, magnetic resonance imaging and positron emission tomography (nuclear medicine).

Information with details on the weekly schedule of topics, assignments and exam dates will be handed out on the first day of class.

## 5. Basis of Student Assessment (Weighting)

Midterm Exam 50%  
Final Exam 50%

## 6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

## A. GRADING SYSTEMS <http://www.camosun.bc.ca/policies/policies.php>

The following two grading systems are used at Camosun College:

### 1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-	Passing Grade	4
65-69	C+	Minimum level <b>has not</b> been achieved.	3
60-64	C		2
50-59	D		1
0-49	F		0

## B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://www.camosun.bc.ca/policies/E-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

## 7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Student Services or the College web site at <http://www.camosun.bc.ca>

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.

<http://www.camosun.bc.ca/policies/policies.html>