

# COURSE SYLLABUS



Camosun College campuses are located on the traditional territories of the Ləkʷəŋən and WSÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

**TERM:** Fall 2020  
**COURSE & SECTION:** DHYG 310  
**COURSE TITLE:** Pharmacology  
**SECTION DETAILS:** Tuesdays 1:00-2:50pm and Thursdays 1:00-2:20pm  
**INSTRUCTOR:** Elizabeth Morch | D004 | [morch@camosun.bc.ca](mailto:morch@camosun.bc.ca) | 250-370-3215  
**OFFICE HOURS:** Posted on D2L (on-line)

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.

Camosun College will continue to follow the guidance of the Provincial Health Officer, the B.C. Government and WorkSafeBC, and as such may revise the delivery of courses. Courses with an approved face-to-face component may need to move to online or remote delivery if necessary.

The COVID-19 pandemic has presented many challenges, and Camosun College is committed to helping you safely complete your education. Following guidelines from the Provincial Health Officer, WorkSafe BC and the B.C. Government to ensure the health and wellbeing of students and employees Camosun College is providing you with every possible protection to keep you safe including COVID Training for students and employees, health checks, infection control protocols including sanitization of spaces, PPE and ensuring physical distancing. Please refer to: <http://camosun.ca/covid19/faq/covid-faqs-students.html> However, if you're at all uncomfortable being on campus, please share your concerns with your Instructor and if needed, alternatives will be discussed.

## COURSE DESCRIPTION

Principles of pharmacology and drug therapy are presented. Drugs used in dentistry are discussed, with special emphasis on drugs and techniques used for pain control. Additional drugs and drug-related issues that have an effect on the delivery of dental hygiene and dental services are also studied.

<input type="checkbox"/>	<b>Synchronous delivery:</b> Courses will be completely online with online scheduled meetings and expectations for remote student participation. There will be meeting times but not on campus. Students will be expected to manage time zone differences for scheduled online activities.	<input type="checkbox"/>	<b>Asynchronous delivery</b> Courses will be completely online with no set meeting schedules. Students may participate from any time zone or anywhere in the world. All evaluation will be managed remotely.	<input checked="" type="checkbox"/>	<b>Blended delivery:</b> A mixed delivery of both synchronous and asynchronous.
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Course Credits: 3  
 Prerequisite(s): B- in BIOL 260, DHYG 280, COM in DHYG 281  
 Corequisite(s):  
 Pre/Corequisite(s): COM in DHYG 371  
 Exclusion(s):

## COURSE DELIVERY

ACTIVITY	HOURS / WEEK	# OF WEEKS	ACTIVITY HOURS
Lecture	3.5	14	49
Seminar			
Lab / Collaborative Learning			
Supervised Field Practice			
Workplace Integrated Learning			
Online			
	<b>TOTAL HOURS</b>		<b>49</b>

### Additional Delivery information:

All students will write mid-term exams at scheduled times TBA. All students will write a final exam scheduled during week 15 (exam week).

## LEARNING OUTCOMES

Upon successful completion of this course, you will be able to:

- Describe and apply basic pharmacological concepts and principles, including drug regulations and the issue of drug abuse.
- Describe how various drugs are used in dental hygiene practice and dentistry.
- Plan and describe ways to safely and effectively administer local anesthetics in order to achieve pain control.
- Describe how various groups of drugs can affect delivery of both dental and dental hygiene care.
- Describe how to identify and treat common oral pathologies with both pharmacological and non-pharmacological interventions.
- Describe select “alternative” or “non-conventional” therapies.

## REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Haveles, E.B.(2019) *Applied Pharmacology for the Dental Hygienist, 8<sup>th</sup> Ed.*: St. Louis, USA: Elsevier

Logothetis, Demetra . (2017)..*Local Anesthesia for the Dental Hygienist 2<sup>nd</sup> Ed* Mosby, St. Louis USA: Elsevier

## COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

Schedule will be posted on D2L

<b>COURSE CONTENT</b>
<b>Course Elements</b>

**1.0 Upon completion of Pharmacology, the successful student will have an understanding of basic pharmacological concepts and principles, including drug regulation and the issue of drug abuse.**

1A – Discuss basic concepts relating to pharmacology.

- define "pharmacology"
- discuss pharmacology as it relates to comprehensive dental hygiene and dental care
- describe common reference texts used for pharmacology
- define pharmacological terminology including "chemical name, trade or proprietary name, brand name and generic name"
- discuss the regulation of drugs in Canada and B.C.

1B – Describe the characteristics of drug action.

- describe a drug's potency and efficacy in relation to a dose-effect curve
- describe factors affecting an individual's response to a drug
- define "pharmacokinetics", "pharmacodynamics" and "pharmacogenomics"
- describe common enteral and parenteral routes of drug administration including the forms of drugs used
- recall knowledge of cell and organ function (from DHYG BIOL 150/151 and 260)
- describe mechanisms for drug passage across body membranes
- describe in general terms the absorption, distribution, metabolism and excretion of drugs
- describe factors that alter the effects of drugs
- describe a "placebo" effect

1C – Discuss adverse reactions to drugs.

- differentiate between "therapeutic" and "adverse" effects of drugs
- describe adverse reactions including toxic reaction, side effect, idiosyncratic reaction, allergy and interference with natural defense mechanisms
- describe clinical manifestations of adverse reactions
- define "poly-pharmacy"
- discuss the addition of sucrose to some medications

1D – Describe prescriptions.

- discuss reasons for a dental hygienist to be knowledgeable about prescription information
- describe measurements and abbreviations used for prescription writing
- describe parts of a prescription and information included in each part
- discuss prescription drug abuse
- describe ways of preventing prescription drug abuse in the dental office

1E – Discuss drug dependence

- define terms used to describe drug dependence
- describe types of drug dependence including patterns of abuse and implications for dental care
- discuss harm reduction and risk management as strategies to promote health
- discuss the use of Naloxone

**2.0 Upon completion of Pharmacology, the successful student will have an understanding of the pharmacology of topical and local anesthetics.**

2A – Recall knowledge of pain and pain perception

- discuss theories of acute and chronic pain

2B – Discuss the pharmacology of local anesthetics.

- Discuss relevant legislation that relates to the use of local anesthesia as part of comprehensive dental hygiene care
- describe the history of local anesthetics
- list properties of an ideal local anesthetic
- Describe the basic differences between the ester and amide chemical classifications
- recall knowledge of nerve physiology (from BIOL 150/151)
- describe the mechanism of local anesthetic action on nerves
- discuss the pharmacokinetics, pharmacologic effects and adverse reactions of local anesthetic agents
- describe the composition of local anesthetic solutions including the action and purpose of each ingredient
- list the concentration, duration and chemical classification of common local anesthetics
- discuss factors to consider when choosing an anesthetic agent
- explain how to calculate maximum dosages for all types and ages of clients
- given information about any client, calculate the maximum dosage for any local anesthetic

2C – Discuss the pharmacology of vasoconstrictors.

- explain the mode of action of vasoconstrictors
- discuss concentrations of vasoconstrictors
- discuss specific vasoconstrictors used in local anesthetics and their clinical action
- discuss drug interactions with epinephrine
- discuss factors to consider when choosing specific vasoconstrictors

2D – Discuss topical anesthetics.

- discuss absorption and systematic effects of topical anesthetics
- describe specific topical anesthetic agents
- describe indications, contraindications and precautions for using topical anesthetics

**3.0 Upon completion of Pharmacology, the successful student will have the knowledge to safely and effectively administer local anesthetics in order to achieve pain control.**

3A – Describe local anesthesia armamentarium

- describe the dental syringe
- describe needles
- describe anesthetic cartridges
- describe additional armamentarium that can be used for the administration of local anesthetic including safety devices

### 3B – Describe preparation of local anesthesia armamentarium

- describe a safe and aseptic method for assembling and disassembling a dental syringe, needle and cartridges
- describe care of used dental needles and cartridges
- describe routine maintenance procedures for the dental syringe
- describe safe needle capping procedures and alternatives to needle capping

### 3C – Discuss evaluating the client prior to using local anesthetic.

- discuss how to determine the need for local anesthetics during comprehensive dental hygiene care
- recall knowledge of health histories (from DHYG 270, 271 )
- discuss key questions/responses to review on the health history prior to the administration of local anesthetics, including the significance of "yes" responses
- recall knowledge of vital signs (from DHYG 270, 271)
- discuss vital signs that contraindicate the administration of local anesthetic
- discuss evaluating a client's stress/anxiety associated with local anesthetic
- describe how the problem-solving process can be used to determine if a client is at risk for local anesthetics
- given comprehensive information for a fictitious client, discuss the client's risk for local anesthesia and choose an appropriate anesthetic solution

### 3D – Describe general principles for local anesthetic injections

- discuss principles for injecting safely, atraumatically, comfortably using stable fulcrums
- discuss interpersonal skills appropriate for the administration of local anesthesia
- discuss interpersonal skills appropriate for clients of various ages and needs, including anxious clients
- describe appropriate medicolegal terminology, symbols and abbreviations to use for recording local anesthetic injections
- apply principles of risk reduction for operator and client well being
- calculate safe doses of the appropriate amide and vasoconstrictor based on the clients medical history

### 3E – Discuss complications and emergencies

- discuss local complications associated with local anesthesia injections including their prevention and management
- discuss systemic complications associated with local anesthesia injections including their prevention and management
- describe signs and symptoms of impending emergencies
- recall knowledge of basic emergency care (from DHYG 270, 271)
- given a description of local or systemic complications from local anesthesia, including emergencies, explain appropriate emergency care

### 3F – Describe local anesthetic injections used for dental hygiene care

- recall knowledge of head and neck anatomy/physiology (from DHYG 219)
- define "infiltration, field block and nerve block"
- describe "aspiration" and discuss its purpose

- describe specific injections for maxillary and mandibular anesthesia including a description of the associated anatomy, choice of needle, insertion site, depth of penetration, amount of solution to deposit hard and soft tissues anesthetized with each injection
- describe methods of testing for anesthesia
- describe how the problem-solving process can be used when lack of anesthesia occurs

3G – Discuss modifications to anesthetic techniques used in dentistry

- discuss considerations specific to periodontal care
- discuss considerations for other dental specialties

**4.0 Upon completion of Pharmacology, the successful student will be familiar with the autonomic group of drugs, narcotic and non-narcotic analgesics, and antimicrobials.**

4A – Describe the characteristics of drugs affecting the autonomic nervous system (ANS)

- recall knowledge of the ANS (from BIOL 150/151)
- list the four groups of drugs affecting the ANS
- describe briefly the pharmacologic effects, adverse reactions, contraindications and uses of drugs in each group
- list common drugs affecting the ANS

4B – Describe the characteristics of non-narcotic analgesics

- recall knowledge of pain and pain perception (from DHYG 245, 246, 280)
- differentiate between pain perception and pain reaction
- differentiate briefly between non-narcotic and narcotic analgesics
- describe groupings of non-narcotic analgesics
- describe the pharmacologic effects, adverse reactions, drug interactions, pharmacokinetics, uses and dosage of aspirin and aspirin-like analgesics and acetaminophen
- list and differentiate between common non-narcotic analgesics
- discuss pharmaceutical agents use to treat migraine headaches
- discuss the pharmacologic effects of cannabis

4C – Describe opioid analgesics

- define "opioid"
- describe the history of opioid use
- describe briefly the pharmacologic effects and adverse reactions to opioids
- describe opioid use and dependence as it relates to dentistry
- list common opioids including their use
- describe safe use naloxone as a harm reduction agent
- discuss safe intramuscular injection technique

4D – Describe anti-infective/antimicrobial agents

- describe the use of anti-infective agents in dentistry
- define terms used to discuss anti-infective agents
- describe sensitivity testing
- describe the indications and adverse effects of antimicrobial agents

- describe the pharmacokinetics, spectrum, resistance, adverse reactions and uses of common anti-infective/antimicrobial drugs used in dentistry
- describe the use of common antifungal and antiviral agents used in dentistry
- describe conditions requiring antibiotic prophylaxis for the prevention of bacterial endocarditis
- describe the College of Dental Hygienists of BC (American Heart Associations)' recommended antibiotic regimen

4E – Describe anti-anxiety drugs.

- recall knowledge of dental anxieties (from DHYG 370)
- list types of anti-anxiety drugs including sedatives, hypnotics and major and minor tranquilizers
- describe the pharmacokinetics, pharmacologic effects, adverse reactions, indications and uses of common anti-anxiety drugs
- describe anti-anxiety drugs that are commonly prescribed for dental anxiety

4F – Describe general and inhalation anesthetics.

- describe methods of administering general anesthetic
- describe the patient's response during the four stages of anesthesia
- describe adverse reactions to general anesthetics
- describe the advantages, safety, contraindications, pharmacologic effects and abuse of nitrous oxide in dentistry
- list common general anesthetics

4G – Describe cardiovascular drugs.

- describe cardiac conditions that require the dental hygienist to consult with the dentist and/or the dentist to consult with the patient's physician
- describe briefly various cardiovascular diseases, drugs used to treat them and the implications of the drugs for dental and dental hygiene care

4H – Describe anticonvulsants.

- describe epilepsy and epileptic seizures
- describe drugs used to control epilepsy and their implications for dental and dental hygiene care
- describe prevention and treatment of epileptic seizures

4I – Describe psychotherapeutic agents.

- describe briefly various psychiatric disorders and depression
- describe general pharmacologic effects and adverse reactions of common antipsychotic agents and antidepressants
- describe drug interactions with psychotherapeutic agents that are significant for dental care

4J – Describe antihistamines.

- describe the pharmacologic effects and adverse reactions of histamines and antihistamines
- describe the use of antihistamines in dentistry

4K – Describe adrenocorticosteroids and newer drug classifications for inflammatory suppression

- define terms relating to adrenocorticosteroids
- describe general pharmacologic effects, adverse reactions and uses of adrenocorticosteroids
- describe the implications of adrenocorticosteroids for dental care
- describe medications used to treat inflammatory bowel disease

4L – Describe drugs used for common hormone therapies.

- recall knowledge of hormones and endocrine imbalances (from BIOL 150/151, BIO 260)
- describe common hormone therapies
- describe the implications of hormone therapy for dental care

4N – Describe respiratory and gastrointestinal drugs.

- describe the use of respiratory and gastrointestinal drugs
- describe the implications of respiratory and gastrointestinal drugs for dental care

4O – Discuss the range of medications that a patient may be taking.

- differentiate between prescription drugs and over-the counter drugs
- discuss the problem of multiple medications particularly with the elderly
- discuss the importance of obtaining information about a patient's current and recent medications during a health history
- recognize the most commonly prescribed drugs currently used in our society.

**5.0 Upon completion of Pharmacology, the successful student will have the knowledge to identify and treat common oral pathologies with both pharmacological and non-pharmacological interventions.**

- recall knowledge of oral pathologies (from DHYG 321)
- describe the pharmacology of drugs used in dentistry
- describe briefly pharmacologic agents used to treat common oral pathologies and conditions
- recall pharmacology agents used in medical emergencies within the dental office (from DHYG 270, 370)

**6.0 Upon completion of Pharmacology, the successful student will be familiar with several “alternative” or “non-conventional” therapies.**

- describe several alternative or non-conventional therapies
- discuss the treatment of several medical conditions or ailments using non-conventional or alternative therapies

## STUDENT EVALUATION

**NOTE: minimum passing grade for this course is B- or 70%**

DESCRIPTION	WEIGHTING
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Naloxone Training and Discussion Board	Upload course certificate to meet learning outcome	5%
Quizzes	Quiz #1	32%
	Quiz #2	30%
Exam	Final Exam (3 hr comprehensive)	33%
If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. If you wish to dispute a final grade you have received, please refer to the <a href="#">Grade Appeal Policy</a> .		<b>TOTAL</b> 100%

## SCHOOL, DEPARTMENT, OR PROGRAM PROCEDURES, REQUIREMENTS, AND STANDARDS

More information available on D2L

## SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/services/>.

Academic Advising	<a href="http://camosun.ca/services/academic-advising/">http://camosun.ca/services/academic-advising/</a>
Accessible Learning	<a href="http://camosun.ca/services/accessible-learning/">http://camosun.ca/services/accessible-learning/</a>
Counselling	<a href="http://camosun.ca/services/counselling-centre/">http://camosun.ca/services/counselling-centre/</a>
D2L Support	<a href="mailto:desupport@camosun.ca">desupport@camosun.ca</a>
Financial Aid and Awards	<a href="http://camosun.ca/services/financial-aid/">http://camosun.ca/services/financial-aid/</a>
Help Centres (Math/English/Science)	<a href="http://camosun.ca/services/help-centres/">http://camosun.ca/services/help-centres/</a>
Indigenous Student Support	<a href="http://camosun.ca/learn/school/indigenous-education-community-connections/">http://camosun.ca/learn/school/indigenous-education-community-connections/</a>
International Student Support	<a href="http://camosun.ca/international/">http://camosun.ca/international/</a>
Learning Skills	<a href="http://camosun.ca/services/writing-centre/learning-skills">http://camosun.ca/services/writing-centre/learning-skills</a>
Library	<a href="http://camosun.ca/services/library/">http://camosun.ca/services/library/</a>
Office of Student Support	<a href="http://camosun.ca/services/student-support/">http://camosun.ca/services/student-support/</a>
Ombuds	<a href="http://camosun.ca/about/ombudsman/">http://camosun.ca/about/ombudsman/</a>
Registration	<a href="http://camosun.ca/services/registration/">http://camosun.ca/services/registration/</a>
Technology Support	<a href="http://camosun.ca/services/its/">http://camosun.ca/services/its/</a>
Writing Centre	<a href="http://camosun.ca/services/writing-centre/">http://camosun.ca/services/writing-centre/</a>

If you have an urgent mental health concern, please contact **Counselling**. Urgent counselling sessions are available daily at both campuses during business hours. If you have an emergency or need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

## STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

## STATEMENTS: POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

## COLLEGE-WIDE POLICIES

### Academic Accommodations for Students with Disabilities

The College is also committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, anxiety, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs and create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate accommodations you need without disclosing your diagnosis or condition to course instructors. If you need to request academic accommodations, you can contact CAL at: [accessible@camosun.ca](mailto:accessible@camosun.ca) or by phone at 250-370-3312 (Lansdowne) or 250-370-4049 (Interurban). Visit <http://camosun.ca/services/accessible-learning/> for more information.

### Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

### Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

### Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

### Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures”

(<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

### Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

### Student Code of Conduct (Academic and Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Conduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

CHAIR REVIEW DATE: Sept 3, 2020 Mandy Hayre

TEMPLATE VERSION: 2020.1

**Changes to this Course Syllabus:** Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.