



## COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/biol.html>

Ω Please note: the College electronically stores this outline for five (5) years only.  
It is **strongly recommended** you keep a copy of this outline with your academic records.  
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

### 1. Instructor Information

	office	telephone	email
Dr. Ahmed Vawda	Fisher 342D	370-3479	<a href="mailto:vawda@camosun.bc.ca">vawda@camosun.bc.ca</a>

### 2. Intended Learning Outcomes

(No changes are to be made to these Intended Learning Outcomes as approved by the Education Council of Camosun College.)

Upon completion of this course the student will be able to:

1. Explain basic concepts of disease processes.
2. With reference to endocrine, cardiovascular, and respiratory disorders, explain how and why normal physiology is altered in the pathogenesis of specific diseases.
3. Correlate disease with treatment and nursing management in one's patients.
4. Explain in lay terms the major features of a patient's disease to the patient.

### 3. Required Materials

#### REQUIRED TEXTBOOK

Hannon, R.A., Pooler, C. and Porth, C.M. (2010). Porth Pathophysiology, Concepts of Altered Health States. 1<sup>st</sup> Canadian edition. Wolters Kluwer Health / Lippincott Williams & Wilkins.

#### OPTIONAL TEXTBOOK

Study Guide for Pathophysiology, Concepts of Altered Health States. 8<sup>th</sup> edition. Lippincott Williams & Wilkins (2009).

*See nursing applications course package for other required textbooks. Some of those books will also be required for parts of the pathophysiology component of the course.*

#### OTHER RESOURCES

This course utilizes Desire2Learn (D2L), the college's adopted learning management system, to provide important additional resources. This source contains useful information to assist you in progressing successfully through the course. It is the student's responsibility to regularly monitor and review information posted on D2L. You can access D2L from the Camosun homepage (<http://camosun.bc.ca>) by clicking on Online Services and then on Online Courses. If you experience any difficulties with D2L, contact the College's Distributed Education Department ([desupport@camosun.bc.ca](mailto:desupport@camosun.bc.ca)) for assistance.

#### 4. Course Content and Schedule

(This section can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

### INTRODUCTION

Welcome to your first pathophysiology course in the nursing program. This document contains important information specifically on the pathology part of the course. Read through it carefully and take note of directives and other advisory information. Since the course comprises both pathology and nursing applications, it is taught jointly by Faculty from Biology and Nursing. You will receive information separately from your nursing Instructor for the nursing applications component of the course.

Biology 252 is the first of two pathophysiology courses for students in the second year of the Bachelor of Science Nursing Program. The course focuses on the basic concepts of pathophysiology that are used to define dysfunction of the major organ systems and integrates pathophysiology with nursing management. The intent is to enable students to apply theoretical knowledge to nursing practice. Use of diagnostic tests, pharmacology and treatment regimes will be included with each unit of study.

*A good prior understanding of the physiology and associated anatomy of the organ systems being studied is ESSENTIAL for success in this course, as this forms the basis for studying pathophysiology. Time constraints do not permit review or re-teaching of physiology and anatomy in class. Students are expected to review this information on their own before commencement of lectures on the appropriate organ system. While this is important for all students in class, those who completed anatomy and physiology more than a year ago and students who achieved less than 70% in these courses generally find this necessary.*

Course content will be available from several sources including lectures, class discussions, textbooks, websites, assignments, self-studies, journal articles and nursing practice. Do not rely exclusively on any one, or only some, of these sources. **Attending lectures regularly is essential for success in this course.** Relying on class notes obtained from a colleague or through other means, will generally **NOT** ensure success in this course because important discussion occurs in class to supplement the notes. This course outline lists the various topics that will be studied in the pathophysiology part of the course. You are encouraged to review these topics in the textbook before classes and to consolidate information obtained in lectures with that in the textbook after each class. Some students find this course challenging because it is both content and concept driven, with a large volume of new information to deal with. In addition, the course involves skills that some may not be adequately experienced in e.g. critical thinking, problem solving, integrating and assimilating information, and working with clinical scenarios. Since these skills develop with experience over time, applying them regularly to course content is important. Your textbooks are good resources for clinical scenarios. Refer to the CD ROM and online resources accompanying the books.

## SELF-STUDY ASSIGNMENTS

Eight topics listed in the course content involve self-study and will not be covered in lectures. These mini assignments are an important learning tool providing valuable experience in understanding, assimilating and rewriting medical information. **They are the student's responsibility, are examinable and make up 8% of the total course evaluation.** All required information on self-study topics can be obtained from the prescribed textbooks. Guidelines on how to approach each topic will be posted on the Desire2Learn (D2L) web resource. These assignments **must** be individual efforts. You are also cautioned against copying information *verbatim* from the textbook into your assignment as this is considered plagiarism. For these assignments you are expected to read, understand and then summarize the information in your own words as per the guidelines for the topic. Each self-study has to be completed and posted (**in word or pdf format only**) into the D2L dropbox by 10 AM on the appropriate closing date shown in the table below. Do not leave submission of self-studies to the last day in case you experience computer or internet problems. **Late submissions will not be accepted.** **Hard copy and emailed submissions are also not acceptable.**

Introductory terminology	September, 13 <sup>th</sup>
Infection	September, 27 <sup>th</sup>
Hypovolemic shock	October, 12 <sup>th</sup>
Lymphoma	October, 25 <sup>th</sup>
Parkinson's disease	November, 8 <sup>th</sup>
Myasthenia gravis	November, 22 <sup>nd</sup>
SIADH and diabetes insipidus	December, 6 <sup>th</sup>
Down syndrome	December, 6 <sup>th</sup>

This is a tentative schedule of lectures. Changes may become necessary depending on progress in class. (some neuro topics **may** carry over into January)

<b>Week</b>	<b>Date</b>	<b>Lecture Topic</b>
1	September 7 - 10	Foundational Concepts of Pathology
2	September 13 - 17	Foundational Concepts of Pathology
3	September 20 - 24	Foundational Concepts of Pathology
4	September 27 – October 1	Cardiovascular Disorders
5	October 4 - 8	Cardiovascular Disorders
6	October 11	Thanksgiving Day – College closed
	October 12 – 15	Cardiovascular Disorders
7	October 18 – 22	Cardiovascular Disorders
8	October 25 – 29	Endocrine Disorders
9	November 1 – 5	Endocrine Disorders
	<b>Monday, Nov 1 (17:00–18:30)</b>	<b>Midterm Exam</b>
10	November 8 – 12	Endocrine Disorders
	November 11	Remembrance Day – College closed
11	November 15 - 19	Endocrine Disorders
		Neurological Disorders
12	November 22 - 26	Neurological Disorders
13	November 29 – December 3	Neurological Disorders
14	December 6 – 10	Neurological Disorders
15	<b>December 13 - 21</b>	<b>Final Examination</b>

# ***COURSE CONTENT***

## **Foundational Concepts of Pathology**

Introductory terminology (**self-study**)

***(Review cell structure & function, Chapter 4)***

Cell injury

- mechanisms of injury
- vulnerability to injury
- adaptive responses

Inflammation

- acute and chronic
- clinical signs

Abnormal immune responses

- immunodeficiency
- hypersensitivity
- autoimmunity

Neoplasia

- benign and malignant tumors
- basic genetics of neoplasia
- invasion & metastasis
- introduction to grading and staging of tumors

Congenital and genetic disorders

- congenital: vulnerability, critical period and teratogens
- genetic: chromosomal, single-gene and complex trait disorders

Fluid-electrolyte and acid-base imbalances

***Review from year 1 anatomy and physiology courses:***

- fluid compartments and distribution within each compartment
- electrolytes and their functions

- transcapillary exchange (very important for future class discussions)

***Covered in lectures:***

- volume deficit

- edema

- 3<sup>rd</sup> spacing

- acidosis and alkalosis

- Henderson Hasselbalch equation

## **Cardiovascular Disorders**

***(Review anatomy & physiology of the cardiovascular system, Chapter 21 and beginning of chapters 22, 23 & 25)***

Disorders of blood vessels and blood pressure  
atherosclerosis  
peripheral arterial disease  
arteriosclerotic occlusive disease

#### Shock

septic and anaphylactic shock (covered under foundational concepts)  
cardiogenic shock (covered with congestive heart failure)  
neurogenic shock (covered under neurologic disorders)  
obstructive shock (see cardiac tamponade and pulmonary embolism)  
hypovolemic shock (**self-study**)

#### Diseases of the heart

angina pectoris (stable, unstable, variant)  
myocardial infarction (acute coronary syndrome)  
cardiomyopathy  
arrhythmias  
valvular disease  
infectious, inflammatory and immunologic disorders  
endocarditis  
rheumatic heart disease  
congestive heart failure

#### Pericardial disorders

pericarditis  
cardiac tamponade

leukemia  
lymphoma (**self-study**)

#### Anemia

iron deficiency  
B<sub>12</sub> and folic acid deficiency  
pernicious  
aplastic  
hemolytic  
hemorrhagic  
sickle cell

## Endocrine Disorders

### *(Review chapter 40)*

Hypo- & hypersecretion

Pancreas

Diabetes mellitus (Type 1 & 2)  
classification & etiology  
prediabetes

- metabolic syndrome
- pathophysiology
- acute complications
  - diabetic ketoacidosis (DKA)
  - hyperosmolar hyperglycemic state (HHS)
  - hypoglycemia
- chronic complications
  - vascular damage
  - atherosclerosis, myocardial infarction, cerebrovascular accident
  - nephropathy
  - neuropathy
  - retinopathy
  - infections

#### Thyroid gland

- goiter
- hyperthyroidism
  - Grave's disease
  - thyrotoxicosis
- hypothyroidism
  - myxedema
  - cretinism

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#### Hashimoto's thyroiditis

#### Adrenal gland

- adrenocortical hyperfunction
  - Cushing's syndrome
  - Conn syndrome
- adrenocortical insufficiency
  - Addison's disease

#### Pituitary gland

- SIADH and diabetes insipidus (**self-study**)

## Neurological Disorders

*(Review anatomy & physiology related to the topics below from year 1 and/or chapter 48)*

#### Degenerative Disorders

- Alzheimer's disease
- multiple sclerosis
- Parkinson's disease (**self-study**)
- amyotrophic lateral sclerosis
- myasthenia gravis (**self-study**)

## Neoplasia

- brain tumors
- tumors of supporting structures

## Infections

- meningitis (bacterial, viral)
- encephalitis

## Seizure disorders

- seizure and epilepsy

## Brain Injury

- increased intracranial pressure
- hemorrhage & hematomas

## Cerebrovascular disorders

- CVA (stroke)
  - ischemic
  - hemorrhagic
  - transient ischemic attack

## Neurogenic shock

## Inflammatory / Paralytic disorders

- Guillan Barre syndrome

## Congenital malformations

- myelomeningocele
- hydrocephalus

## Genetic disorders (**self-study**)

- Down syndrome

### 5. Basis of Student Assessment (Weighting)

*(This section should be directly linked to the Intended Learning Outcomes.)*

Midterm Exam pathophysiology ( <b>November 1<sup>st</sup> 17:00 to 18:30</b> )	30%
Midterm Exam nursing applications (see nursing course package for date)	8%
Nursing applications assignment (details from nursing Instructor)	15%
Self study mini assignments	8%
Comprehensive final exam (college exam period)	39%

Note that writing all exams and submission of all completed assignments is compulsory. Even though a final course mark of 60% and above might be achieved, if all required activities are not satisfactorily completed, an F grade will be assigned for the course.

### 6. Grading System

*(No changes are to be made to this section unless the Approved Course Description has been forwarded through the Education Council of Camosun College for approval.)*



## 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-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

### 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 E-1.5 at [camosun.ca](http://camosun.ca) 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. <i>(For these courses a final grade will be assigned to either the 3<sup>rd</sup> course attempt or at the point of course completion.)</i>
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, at Student Services, or the College web site at [camosun.ca](http://camosun.ca).

### STUDENT CONDUCT POLICY

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

### ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED