

**CAMOSUN COLLEGE**  
**Biology Department**  
**BIOLOGY 252 Pathophysiology for Nursing 1**  
**Fall 2004**  
**COURSE OUTLINE**

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### **INTRODUCTION**

Biology 252 is the first half of a two-semester course for students in the second year of the Collaborative Curriculum for the Bachelor of Science in Nursing Program. The course focuses on the basic concepts of pathology that are used to define dysfunction of the major organ systems.

The course is taught jointly by faculty from Biology and Nursing. The intent is to enable students to apply and integrate the theory of pathophysiology to client cases during clinical practice. Physical assessment skills, use of diagnostic test results, pharmacology and treatment regimes used by the health team will be included with each unit. It is important to note that this is an integrated course comprising both pathophysiology and nursing applications.

During the course, you will obtain information from several sources including lectures, class discussions, textbooks, client profiles and clinical practice. Do not rely exclusively on any one, or only some, of these sources. Attending lectures is very strongly recommended. Relying exclusively on class notes obtained from a colleague or through other means, will generally NOT ensure success in this course. This course outline lists the various topics that will be covered. 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 of the topics involve self-study (indicated in the outline) and will not be covered in lectures. Self-study topics are also examinable.** All required information on self-study topics is available in your textbook.

It is essential that students have a good understanding of normal physiology and some of the associated anatomy of the organ systems being covered as this forms the basis for studying pathophysiology. There will be no time to review or re-teach this in class. If necessary, you must review this information on your own.

### **INTENDED LEARNING OUTCOMES**

On successful completion of this course, you should be able to:

- demonstrate an understanding of basic concepts of disease processes
- recognize and explain how and why normal physiology is altered in the pathogenesis of specific diseases
- correlate disease with treatment and nursing management in your patients
- explain in simple terms the major features of a patient's disease to the patient.

### **INSTRUCTORS**

Dr. Ahmed Vawda (Biology)    F342D            370-3479            vawda@camosun.bc.ca

Patty Foster (Nursing)    TBA

Neena Mattu (Nursing)    TBA

## REQUIRED TEXTBOOKS

Black, J.M.& Hawks, J.H. (2005). *Medical-Surgical Nursing: Clinical Management for Positive Outcomes* (7<sup>th</sup> ed.). Elsevier Saunders, St Louis.

Eisenhauer, L., Nicols, L., Spencer, R., Bergan F., (1998). *Clinical Pharmacology and Nursing Management* (5<sup>th</sup> ed.). Lippincott, New York.

Estes, M. (2002). *Health Assessment and Physical Examination*. (2<sup>nd</sup> ed) Delmar, New York.

Pagana, K. & Pagana, J. (2001). *Diagnostic and Laboratory Test Reference* (5<sup>th</sup> ed.). Mosby, New York.

Pillitteri, A. (2003). *Maternal & Child Health Nursing. Care of the Childbearing and Childrearing Family* (4<sup>th</sup> ed). Lippincott, Philadelphia.

(N.B. these books are required for other nursing courses as well and you may already have some of them)

## OPTIONAL TEXTBOOKS

Porth, C.M. (2002). *Pathophysiology. Concepts of Altered Health States* (6<sup>th</sup> ed). Lippincott, Philadelphia.

Porth, C.M. (2004). *Essentials of Pathophysiology. Concepts of Altered Health States*. Lippincott, Philadelphia.

## EVALUATION

Mid-term exam ( <b>Monday, Nov 1; 11h30 – 13h00</b> )	35%
Client Profile / Class Presentations	20%
Comprehensive final exam (college exam period)	45%

Tests and examinations will integrate both the pathology and nursing components of the course. However, the OVERALL weighting will reflect the disparity in number of lectures for each component. Examinations must be written at the specified date and time, unless there is a medical emergency that prevents you from doing so. **You must notify the Instructor before the examination and submit a doctor's note that indicates the doctor's evaluation that you were unable to write the examination.**

## LETTER GRADES

The following percentage conversion to letter grade will be used for this course:

A+ = 95 - 100%	B = 75 - 79%	D = 50 - 59%
A = 90 - 94%	B- = 70 - 74%	F = 0.0 - 49%
A- = 85 - 89%	C+ = 65 - 69%	
B+ = 80 - 84%	C = 60 - 64%	

Although the pass mark for Biology 252 is 60%, in order to continue in the nursing program, you must “achieve a cumulative GPA of at least 3.5 on a 9.0 scale”. This translates to an overall grade of C+ and must be considered an absolute minimum.

As a learning and evaluation tool, client profiles will be used to link the pathology and nursing components of the course. There will be one client profile and one class presentation during the term contributing 20% of the total course mark. See the information below for details on client profiles and topic presentations.

### **Submission dates for client profiles and presentations:**

Group Topic Presentation (date as chosen from topic list)  
Individual Client Profile - first half of the class: week of October 12  
- second half of class: week of November 15  
Consult your nursing Instructor for details

You are encouraged to consult the instructors if you require assistance or experience difficulty with the course. From time to time course material may be made available to you via the reserve section of the College library or the bulletin board.

The following services are also available to you.

### **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, Registrar's Office or the College web site.

Your attention is drawn to the academic conduct policy of the College

### **ACADEMIC CONDUCT POLICY**

There is an Academic 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.

The following is a **tentative** schedule of lectures. Changes may become necessary depending on progress in class.

<b>Week</b>	<b>Date</b>	<b>Lecture Topic</b>
1	Sept 7 – 10	Orientation / Basic Concepts
2	Sept 13 – 17	Basic Concepts
3	Sept 20 – 24	Basic Concepts
4	Sept 27 – Oct 1	Basic Concepts
5	Oct 4 – 8	Endocrine Disorders
6	Oct 11 <b>Oct 12</b> Oct 12 - 15	Thanksgiving <b>Group 1 client profile due</b> Endocrine Disorders
7	Oct 18 – 22	Endocrine Disorders
8	Oct 25 – 29	Cardiovascular Disorders
9	Nov 1 – 5  <b>Nov 1</b>	Cardiovascular Disorders  <b>MIDTERM (11h30 – 13h00)</b>
10	Nov 8 – 12  Nov 11	Cardiovascular Disorders  Remembrance Day
11	Nov 15 – 19  <b>Nov 15</b>	Cardiovascular Disorders  <b>Group 2 client profile due</b>
12	Nov 22 – 26	Respiratory Disorders
13	Nov 29 – Dec 3	Respiratory Disorders
14	Dec 6 – 10	Respiratory Disorders
15	Dec 13 – 21	Final Examination

## COURSE CONTENT

### Unit 1: Concepts of Pathology

- Terminology
- Cellular injury
- Inflammation
- Healing (**self study, Black page 401**)
  - Proliferation / resolution
  - Maturation / reconstruction
  
- Infection/Fever
- Abnormal immune responses
- Neoplasia
- Congenital and genetic disorders
- Fluid-electrolyte and acid-base imbalance

### Unit 2: Endocrine Disorders

- Pancreas
  - Diabetes mellitus
    - Acute complications
    - Chronic complications
  
- Thyroid gland
  - Hyperthyroidism
  - Hypothyroidism
  
- Adrenal gland
  - Adrenocortical insufficiency
  - Adrenocortical hyperfunction
  
- Pituitary gland
  - Hyperpituitarism
  - Hypopituitarism

### Unit 3: Cardiovascular System

- Cellular Injury
  - Angina - coronary artery disease
  - Peripheral vascular disease
  - Hypertension
  - Myocardial infarction
  
- Neoplasia
  - Leukemia
  - Lymphoma (**self study, Black pages 2411 - 2417**)

Infection

Rheumatic fever  
Endocarditis/pericarditis

Disorders of Structure and Function

Heart failure  
Cardiomyopathy  
Arrhythmias  
Aneurysms  
Valvular disease  
Anemia  
Lymphatic disorders (**self study, Black pages 1542 - 1545**)  
Cardiac tamponade  
Hemorrhagic disorders (**self study, Black pages 2307 - 2310**)  
Disseminated intravascular coagulation

**Unit 4: RESPIRATORY DISORDERS**

Chronic obstructive pulmonary disease COPD  
Chronic bronchitis  
Emphysema  
Asthma

Sinusitis, rhinitis, pharyngitis, tonsillitis, laryngitis (**self-study, Black pages 1797 - 1801**)

Lung cancer  
Atelectasis  
Pleural effusion  
Pulmonary edema  
Acute respiratory failure  
Adult Respiratory Distress Syndrome (ARDS)  
Pulmonary embolism  
Pulmonary hypertension  
Chest wall configuration and deformities (**self-study, Black pages 1748 – 1750; Fig. 16-4, page 1752**)  
Cystic fibrosis  
Influenza  
Pneumonia  
Pulmonary tuberculosis (**self-study, Black pages 1844 - 1849**)

## CLIENT PROFILE AND TOPIC PRESENTATIONS

The two required Nursing assignments for the course consist of a **Client Profile** (an individual assignment) and a **Topic Presentation** (a group project). Each assignment is worth 10% of the overall mark for Biology 252. Historically, students have been able to pass this course through the effort they put into these assignments. Attendance in class is critical as all information presented in class is examinable.

\*The **Client Profile** provides a learning opportunity to relate theory that you are learning in the classroom to the conditions that you are observing in the client population on your nursing practice area in hospital.

**Format:** **APA Guidelines** must be utilized (this includes spelling, grammar and references). Information re: APA Guidelines is available on Internet and in the college library and learning center.  
Use only Approved Abbreviations from the VIHA Recording Manual  
Charts, tables may be located in the body of the text or can be added as appendices as per APA Guidelines.  
Must be no longer than 8-10 pages (more pages will not be read).  
**Remove all information that would jeopardize client confidentiality.**  
(Use a pseudonym only.)

### **What to Include:**

Individual client profiles are done based on a client in the student's nursing practice area. Students not in Nursing Practice must speak with the instructor regarding the Client Profiles.

### **Introduction:**

Pseudonym, age, gender, allergies, advanced directives.  
Admission diagnosis and symptoms.  
Client understanding of the reason for admission.  
Discharge diagnosis.  
Length of stay (in days).  
Day (day 1, 2, 3, etc.) of diagnostic procedures (on the unit and off), laboratory tests, treatment procedures, OR's, etc.  
Brief health history that relates to the present admission.  
Social history as it relates to the present admission (e.g., person in highly stressful occupation admitted with myocardial infarction, person with IV substance use issues admitted with sepsis).  
Members of the health care team involved in the care of the patient (by occupation, not name).

### **Body:**

Description of the client's condition/s in terms as learned in pathophysiology. (Focus on one or two of the client's most significant conditions. Other conditions must be listed and a statement made indicating how these relate to the condition/s being discussed.)

"Patho Links" – Explore the relationships between:

- presenting diagnoses (e.g., diabetes and below knee amputation)
- what the diagnostic and laboratory tests tell us about the client's health status
- what impact medications and treatments have on the client's health status (list the medications and describe their classification and modes of action as they relate to this client).

### Treatment Implications for the Client

Describe rationale for these treatment and medication choices from the pathophysiological perspective.

- Are these interventions effective or not?
  - What evidence is there of this?

### Nursing Implications

- What are the nursing implications in the care of this client? Why? Justify your decisions. What nursing care planning is indicated for optimal care of this client? Why? Relate the above to the pathology occurring for this client as evidenced by signs and symptoms, laboratory results and results of diagnostic procedures.

**Assessment-----Planning-----Intervention-----Evaluation**

### Conclusion:

Considering your findings above, are the right things being done for your client? What do you think the outcomes will be for this client? What role do you see yourself having as a client advocate for “best practice” care for this client?

**\*Group Topic Presentations:** This project provides an opportunity for students to collaborate in the research and presentation of information about health challenges and how the “Patho links” relate in the care of the client. Groups will be comprised of 4 students. Formation of groups will be determined in each section with their instructor. You will collaborate on the work and there must be evidence that each group member participates equally and has knowledge of the complete picture of the topic. A specific criteria for requirements of the presentation will be provided during the orientation class at the beginning of the semester. This will include a current Nursing Journal article on the chosen topic and a brief meeting with the instructor before your presentation to clarify information and to enable the instructor to support your research and learning.

### **Marking Criteria and Due Dates:**

**Due Dates: Group Topic Presentation** (date as chosen from topic list)

**Individual Client Profile - Half of the class:** Week of October 12

**- Second half of class:** Week of November 15

(The students in groups presenting during the first half of the semester will hand in profiles due November 15 during class time. Members of groups presenting in the second half of the semester will hand in profiles due October 12 during class time.)

**Breakdown of Marks for Profile and Presentation:** This information will be provided at the orientation meeting. Do not hesitate to make an appointment with us to discuss questions about these assignments.