



COURSE OUTLINE SCHOOL OF NURSING

COURSE NAME: Personal Support Worker Pathway To Practical Nursing Program Science
COURSE CODE: SCI 1008
CREDIT HOURS: 56 (4 x14) Hours
PREREQUISITES: PSW Certificate
COREQUISITES: None
PLAR ELIGIBLE: YES () NO (X)
EFFECTIVE DATE: JANUARY 2010
PROFESSOR: Dr. Leslie Brailsford OFFICE #: Room 408B SJA
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NOTE TO STUDENTS: Academic Departments at George Brown College will NOT retain historical copies of Course Outlines. We urge you to retain this Course Outline for your future reference.

FOR OFFICE USE ONLY	
ORIGINATOR: <u>Leslie Brailsford</u>	August 2009
SIGNATURE	DATE
CHAIR: <u><i>Anne MacRae</i></u>	<u>Jan 2010</u>
SIGNATURE	DATE
DATE OF REVISION: <u>August 2009</u>	

EQUITY STATEMENT: George Brown College values the talents and contributions of its students, staff and community partners and seeks to create a welcoming environment where equity, diversity and safety of all groups are fundamental. Language or activities which are inconsistent with this philosophy violate the College policy on the Prevention of Discrimination and Harassment and will not be tolerated. The commitment and cooperation of all students and staff are required to maintain this environment. Information and assistance are available through your Chair, Student Affairs, the Student Association or the Human Rights Advisor.

George Brown College is dedicated to providing equal access to students with disabilities. If you require academic accommodations visit the Disability Services Office or the Deaf and Hard of Hearing Services Office on your campus.

STUDENT RESPONSIBILITIES: Students should obtain a copy of the *Student Handbook* and refer to it for additional information regarding the grading system, withdrawals, exemptions, class assignments, missed tests and exams, supplemental privileges, and academic dishonesty. Students are required to apply themselves diligently to the course of study, and to prepare class and homework assignments as given. Past student performance shows a strong relationship between regular attendance and success.

COURSE DESCRIPTION:

This Course is designed to provide the student with the basic foundation in the physical and biological Sciences to help ensure success in the health professions.

The student is introduced to the fundamental laws of Physics and Chemistry with relevance to the health profession. The application of the principle of the physical sciences involves minimum use of mathematical computations. Cell biology forms the major component of this course with significant emphasis placed on eukaryotic cellular physiology and genetics. To prepare the student for entry into the practical nursing field, this course introduced the student to language of anatomy, level of human structural organization and an overview of human organ systems.

ESSENTIAL EMPLOYABILITY SKILLS:

As mandated by the Ministry of Training, Colleges and Universities essential employability skills (EES) will be addressed throughout all programs of study. Students will have the opportunity to **learn (L)** specific skills, to **practice (P)** these skills, and/or **be evaluated (E)** on the EES outcomes in a variety of courses. The EES include communication, numeracy, critical thinking & problem solving, information management, interpersonal and personal skills. The faculty for this course has indicated which of the EES are Learned (L), Practiced (P) or Evaluated (E) in this course:

Skill	L	P	E	Skill	L	P	E
1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience	√	√		7. locate, select, organize and document information using appropriate technology and information sources	√	√	
2. respond to written, spoken or visual messages in a manner that ensures effective communication	√	√	√	8. show respect for the diverse opinions, values, belief systems, and contributions of others			
3. execute mathematical operations accurately	√	√	√	9. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals			
4. apply a systematic approach to solve problems	√	√	√	10. manage the use of time and other resources to complete projects	√	√	√
5. use a variety of thinking skills to anticipate and solve problems	√	√	√	11. take responsibility for one's own actions, decisions and consequences	√	√	√
6. analyze, evaluate, and apply relevant information from a variety of sources	√	√	√				

COURSE OUTCOMES:

Upon successful completion of this course the students will have reliably demonstrated the ability to:

1. Recall units, fundamental terms, theories and laws used in the physical, biological, health sciences.
2. Understand the basic chemical and biochemical structures and reactions of abundant elements and compounds.
3. Demonstrate problem-solving skills as related to simple physical and biological science problems.
4. Explain the significance of molecular and cellular structures.
5. Explain the basic molecular and cellular processes that contribute and sustain life forms.
6. Identify and briefly describe organelles, tissue types, organ systems and gross anatomy of the human body.
7. Effectively utilize resources to review a bioscience topic.

DELIVERY METHODS / LEARNING ACTIVITIES:

1. Lecture and class discussion
2. Use of internet resources
3. Practice exercises and quizzes
4. Case study
5. Audio-visual tools where applicable

LIST OF TEXTBOOKS AND OTHER TEACHING AIDS:

Required:

Sackheim, G.I: *An Introduction to Chemistry for Biology Students (9th Edition)*.
Pearson-Benjamin Cummings

Recommended / Optional:

1. Marieb, E.N. *Essentials of Human Anatomy and Physiology (9th Edition)*. Pearson-Benjamin Cummings.
2. Engelkirk, P.G. & Burton, G. R. W: *Microbiology for the Health Sciences (8th Edition)* Lippincott Williams and Wilkins,

TESTING POLICY:

Attendance at tests and examination is compulsory. A student who is absent on the day of a test/examination will be permitted to write an equivalent *Make-up test/examination* **ONLY** if the student presents to the professor a **valid document** for being absent. This document should show that a legitimate reason (*e.g.* court/immigration document or medical certificate) or a *grave cause* (circumstances arising on compassionate grounds, *e.g.*, illness or death in the family, or circumstances beyond the student's control) that prevented him/her from sitting the test/examination at the scheduled time.

A student who, on the day of the test, realizes that he/she cannot attend the test/examination must inform the professor of his/her absence by e-mail or leaving a message in the professor's voice mailbox.

The e-mail/message should include:

- a) the student's full name and the phone number where he/she may be reached that day;
- b) the test that will be missed.

A student who satisfies the requirements for *Make-up test/examination* will write the make-up test/examination *at the end of the semester*. The same objectives covered in the missed test/examination will be examined in the Make-up test/examination but **the format for all Make-up test/examination will differ**. For Make-up tests/examinations the student will write the answers to all questions. The status of students who do not satisfy the requirements for *Make-up test/examination* will be reviewed by the **Promotions Committee** and may result in a grade of "F" (0) for the missed test/examination (see Practical Nursing Program Promotion Policies & Procedures, Practical Nursing Program STUDENT HANDBOOK).

No re-writes of any test in this course, for the purpose of raising a mark already obtained, is permitted.

ASSIGNMENT POLICY:

As partial fulfillment of the requirements for this course, a term paper is necessary. All students **must** complete this assignment to obtain a pass in this course. The assignment is designed to test the ability of the individual; therefore it must **NOT** be undertaken as *group work*. **Assignments identified as group work will not be graded.**

Each student is required to complete and submitted the assignment using the format requested. The assignment must be completed as requested and submitted on the date stated. Failure to submit assignment as requested will incur a penalty: Late assignment will be subjected to 5% deduction for the first 4 days after the due date; after the 4th day, late assignments will be subjected to a penalty of twenty percent (20%) per day deduction.

EVALUATION SYSTEM:

Assessment Tool:	Description:	Outcome(s) assessed:	EES assessed:	Date / Week:	% of Final Grade:
Case Study	1-page analysis	2, 3, 7	1, 4, 5	Week 9	5%
Term Test 1	Multiple choice: 40-50q Short Answers: 5-10q	1-4	1, 3, 4	Week 6	20%
Term Test 2	Multiple choice: 40-50q Short Answers: 5-10q	1,2, 3, 4, 5, 6	1, 3, 4	Week 11	25%
Term Paper	7-pages Maximum	2,3,4,7	2,3, 4,5,6 7,10, 11	Week 13	15%
Comprehensive Examination	Multiple Choice	1-6	1-6, 10 , 11	Week 15	35%
Total					100%

GRADING SYSTEM

The passing grade for this course is: C-

A+	90-100	4.0	B+	77-79	3.3	C+	67-69	2.3	Below 60	F			
A	86-89	4.0	B	73-76	3.0	C	63-66	2.0					
A-	80-85	3.7	B-	70-72	2.7	C-	60-62	1.7					

Excerpt from the College Policy on Academic Dishonesty:

The *minimal* consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material.

To view George Brown College policies please go to www.georgebrown.ca/policies

TOPICAL OUTLINE:

Week	Topic / Task	Outcome(s)	Content / Activities	Resources
1	Measurements in physical biological and health sciences	1, 3	Powers of Ten, Metric system; Mass; Weight; Length; Volume; Temperature; Time; Measurements using combination of Units; Density; Specific gravity Problem Solving	Lecture Notes
2	Motion, Force and Machine	1, 3	Speed, acceleration, gravity, force, Newton's Three Laws of Motion, Work, Power, Levers and Pulleys	Lecture Notes
3	Energy and Changes of Matter	1, 3	Potential energy, Kinetic energy, Type of energy, Change of energy, Properties of Solid, Liquids and Gases Pressure, Capillary action, Surface tension	Lecture Notes
4	Heat Energy, Fluids and Electricity	1, 3	Conduction, Radiation, Convection, The Gas Laws: <i>Boyle's Law</i> , <i>Charles' Law</i> , <i>Gay-Lussac's Law</i> , <i>Dalton's Law</i> , <i>Henry's Law</i> , Diffusion, Electromagnetic radiation, electric charge, current, voltage and resistance	Lecture Notes
5	Matter, Atoms and Molecules	1-4	Properties of matter; Chemical and Physical changes, Pure Substances, Elements; Periodic Table; Atomic Structure; Molecules; Compounds Mixtures; Atomic Mass and number; Moles;	Reference: Marieb Chapter 2 Lecture Notes

			Balance Chemical Equations	
6	Test 1 Atomic Bonding And Chemical Changes	1-4	Topics Covered Weeks 1- 4 Ionic, Covalent and Hydrogen bonding; Isotopes; Combination, oxidation-reduction reactions	Reference: Marieb Chapter 2 Lecture Notes
7	Acids, Bases and Salts; Water Organic Compounds	1-4	Properties of acids; pH; Properties of bases, Salts. Acidosis; Alkalosis; Property of water, Solutions and colloids; Protein, Carbohydrate, Lipids; Nucleic Acids	Reference: Marieb Chapter 2 Lecture Notes
8	INTERSESSION WEEK			
9	Cellular Structure and Metabolism	4-6	Cell Anatomy: <i>Cell Membrane, Cytoplasm, Organelles</i> ; Cell Physiology: Active and Passive Membrane Transport	Reference: Marieb Chapter 3 Pg 65-86 Lecture Notes
10	Cell Protein Synthesis and Cell Division	4-6	RNA, DNA, Protein Synthesis, Transcription and Translation, Gene; Stages of Cell Division	Reference: Marieb Chapter 3 Pg. 65-86 Lecture Notes
11	Test 2 Microbiology	4-6	Topics Covered Weeks 5-9 Properties of Bacteria, Viruses, Fungi, Protozoa; Mode of disease Transmission; Measures of Disease Prevention	Reference Burton's Microbiology
12	Heredity	1, 3	Gene Pairs; Genotype and Phenotype; Genetic variations; dominant-recessive inheritance, Sex-linked inheritance	Lecture Notes

13	Human Anatomy and Medical terminology	1,4-6	Definitions; Levels of Structural organization; Homeostasis; Organ systems; Anatomical Position Directional and Regional Terms	Reference: Marieb Chapter 1 Lecture Notes
14	Human Anatomy and Medical terminology	1,4-6	Definitions; Body planes, sections and cavities; Tissue and Membranes Types and locations.	Reference: Marieb Chapter 3 88-98 Lecture Notes
15	Comprehensive Examination		Entire Course Material	
<p>Please note: this schedule may change as resources and circumstances require.</p> <p>For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: http://www.georgebrown.ca/Admin/Registr/PSCal.aspx</p>				