

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: Anatomy and Physiology I
CODE NO. : PNG111 **SEMESTER:** 1
PROGRAM: Practical Nursing ; Fitness and Health
AUTHOR: Ann Boyonoski, Northern Partners in Practical Nursing Education
DATE: Sept/09 **PREVIOUS OUTLINE DATED:** Sept/08
APPROVED: "Lucy Pilon"

CHAIR, HEALTH PROGRAMS

DATE

TOTAL CREDITS: 3

PREREQUISITE(S): None

HOURS/WEEK: 3

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For additional information, please contact the Chair, Health Programs
School of Health and Community Services
(705) 759-2554, Ext. 2689

I. COURSE DESCRIPTION:

This course introduces the learner to the normal development, structures and functions of the human body. The learner will examine the physiological components of the human body, in order to obtain knowledge and understanding about how the structures and functions of the body are related.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course the learner will be able to:

1. Use the appropriate terminology related to the organization, structure and function of the human body.

Elements of the Performance:

- Define anatomy and physiology
 - Name the following :
 - levels of organization of the human body
 - major organs for each body system
 - the directional terms that describe the location of body parts
 - the major body regions
 - the 3 planes used in making sections of the body or body parts
 - the 2 major body cavities, their subdivisions and membranes
 - the major organs located in each body cavity
 - the 4 quadrants and 9 regions of the abdominopelvic region
 - Review the selected key terms (vocabulary) for each specific area of study/system studied
2. Examine the chemical composition and chemical interactions (life processes) of the human body.

Elements of the Performance:

- Describe the basic structure of an atom
- Explain the meaning of a chemical formula
- Distinguish between organic and inorganic compounds
- Compare the 3 types of chemical bonds
- Identify the difference between acids, bases and salts
- Examine the concept of pH and its relationship to acids, bases and salts in the body
- List the 4 major groups of organic substances in the body and give examples and functions of specific types in each group
- Explain the role of enzymes
- Describe the composition and role of ATP
- Explain the relationship between elements, compounds, atoms and molecules
- Explain the properties that make water such an important inorganic molecule in living organisms
- Explain why knowledge of basic chemistry is important in the study of life processes.

3. Describe the relationship between the structure and function of the human body.

Elements of the Performance:

- Define homeostasis and explain its relationship to normal body functions
- List the five basic needs essential to human life

4. Describe the location, development, structure and function of cells, tissues and organs of stated body systems

Elements of the Performance:

THE CELL

- Describe the structure of a typical cell
- List the function of each part of a typical cell
- Identify the 2 processes that allow substances to enter and leave cells
- Explain the role of DNA and RNA
- List the 2 processes of cell division
- Differentiate the phases of mitosis and meiosis

TISSUES AND MEMBRANES

- Describe the distinguishing characteristics of each type of tissue and membrane
- Identify the common location and function of each type of tissue and membrane

SYSTEMS

- **Integumentary System:**
 - Describe the basic structure of the skin and its layers
 - Describe the basic functions of the skin and its layers
 - Describe how skin colour is determined
 - Identify and describe the basic functions of the accessory structures of the skin formed by the epidermis

- **Skeletal System:**
 - Identify the major functions of the skeletal system
 - Identify the composition of bone structure
 - Explain the basic process of bone formation
 - Name the 2 divisions of the skeleton
 - Identify the bones of the axial and appendicular skeleton
 - Compare cervical, thoracic, lumbar, and sacral vertebrae
 - Compare immovable, slightly movable and freely movable joints

- **Muscle System:**
 - Compare the structure and function of the 3 types of muscle tissue
 - Explain the basic concept of muscle contraction
 - Explain the relationship between muscle origin, insertion and action
 - Identify the major muscles of the body
 - Describe the location and action of the major muscles of the body

Potential Elements of the Performance:

Nervous System

- Name the anatomical divisions of the nervous system, their components and functions
- Name the functional divisions of the nervous system, their components and functions
- Identify the 2 types of cells that make-up nerve tissue
- Describe the formation and conduction of a nerve impulse
- Describe how impulses are transmitted across a synapse
- Explain how the central nervous system is protected from injury

The Special Senses

- Describe the basic function of sensory receptors, neurons, nerves and the cerebral cortex
- Describe the location of receptors for heat, cold, touch, pressure and pain
- Describe the location, structure and function of olfactory and taste receptors, receptors involved in hearing, receptors involved in equilibrium and sight

III. TOPICS:

1. Organization of the Human Body
2. The Chemical Basis of Life
3. The Cell
4. Tissues and Membranes
5. Integumentary System
6. Skeletal System
7. Muscular System
8. Nervous System
9. Special Senses

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Marieb, E. N. (2009). *Essentials of Human Anatomy and Physiology*. (9th ed.). Benjamin Cummings.

Marieb, E. N. (2009). *Anatomy and Physiology Colouring Workbook: A Complete Study Guide*. (9th ed). Benjamin Cummings.

Sault College LMS (class notes, textbook support, online quizzes, important announcements)

RECOMMENDED:

Jones, S. A. *Pocket Anatomy and Physiology*. F.A.Davis Co
ISBN-13: 978-0-8036-1824-4
ISBN-10: 0-8036-1824-7

V. EVALUATION PROCESS/GRADING SYSTEM:

1. **The pass mark for this course is 60% for PN (50% for FHP).** It is composed of online quizzes, term tests, and a final exam.

2. Evaluation Methods:

Semester exams (2) (MC & diagrams) 50%

Final Exam (MC & diagrams) 30%

Online chapter quizzes (10) 20%

TOTAL 100%

Online quizzes; two attempts for each quiz, highest mark will count.
Final exam will consist of course material from the **entire** course.

3. Students missing the tests or the final exam because of illness or other serious reason must inform the professor at least one hour **before** (759-2554, Ext. 2635 OR via email/LMS). Those students who have notified the professor of their absence, according to policy, will be eligible to arrange an opportunity to write **as soon as possible** upon return to the college. Those students who **do not notify** the professor will receive a zero for that exam. See Student Success Guide.

V. EVALUATION PROCESS/GRADING SYSTEM:

4. Course Grading Scheme:

The following semester grades will be assigned to students in post-secondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00

D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

NOTE:

Mid Term grades are provided in theory classes and clinical/field placement experiences. Students are notified that the midterm grade is an interim grade and is subject to change.

For such reasons as program certification or program articulation, certain courses require minimums of greater than 50% and/or have mandatory components to achieve a passing grade.

It is also important to note, that the minimum overall GPA required in order to graduate from a Sault College program remains 2.0.

VI. SPECIAL NOTES:Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may:

- (i) issue a verbal reprimand,
- (ii) make an assignment of a lower grade with explanation,
- (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade "C",
- (iv) make an automatic assignment of a failing grade,
- (v) recommend to the Chair dismissal from the course with the assignment of a failing grade.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session. *It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.*