

Anatomy & Physiology I

2013-2014

Distance Education Program		
Practical Nursing	1	1

Course code: BIO 1581	Equivalent Code:
Course hours: 42	GPA weighting: 3
Prerequisite: NA	Corequisite: NA
Prepared by: Debra Morrison, RN, MN	

Laptop course: yes no

Authorized by (Dean): _____ **Date:** _____

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Course Description:

Anatomy and Physiology I examines the normal structure and function of the human adult. The course begins with an orientation to the human body, the levels of organization within the body and the inter-related and interdependence of body systems. The concepts of metabolism, fundamental physiological needs and homeostasis are introduced. All knowledge is then applied to the study of the integumentary, skeletal, muscle and the nervous systems. Learner preparation and learning activities are designed to promote critical thinking.

Rationale:

Knowledge of normal anatomy and physiology provides a scientific basis for nursing practice. This knowledge enhances the student's ability to; understand the rationale related to client care, perform holistic assessments, select appropriate nursing interventions, and question health related information. As a result, the knowledge and insights gained in this subject promote the development of clinical judgment. The vocabulary learned in this course assists the student to communicate effectively within the health care environment Highlight this text and type or copy/paste rationale

Subject Eligibility for Prior Learning Assessment & Recognition (PLAR)

Yes No

(Candidate eligibility is outlined in the

<http://www.durhamcollege.ca/assets/Section-specific/Continuing-Education/documents/plar.pdf>

Course Learning Outcomes

Course Specific Outcomes

Students receiving a credit for this course will have demonstrated their ability to:

1. discuss the concepts of metabolism, fundamental physiological needs and homeostasis
2. describe the levels of body organization.
3. relate the above concepts to the integumentary, skeletal, muscle and nervous systems and the senses.
4. explain how selected factors influence normal structure and function.
5. utilize appropriate vocabulary when discussing body structure and function.

Essential Employability Outcomes

Students receiving a credit for this course will have demonstrated their ability to:

6. communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.
7. respond to written, spoken, or visual messages in a manner that ensures effective communication.
8. apply a systematic approach to solve problems.
9. use a variety of thinking skills to anticipate and solve problems.
10. locate, select, organize, and document information using appropriate technology and information systems.
11. analyze, evaluate, and apply relevant information from a variety of sources
12. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
13. manage the use of time and other resources to complete project.
14. take responsibility for one's own actions, decisions, and consequences.

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
1	<p>UNIT 1 – INTRODUCTION TO HUMAN ANATOMY AND PHYSIOLOGY</p> <ol style="list-style-type: none"> Distinguish between anatomy and physiology, explain their relationship. Describe the characteristics of life. Define the term metabolism and explain its significance. Differentiate between anabolism and catabolism. Discuss the basic physiological needs. Discuss the concept and importance of homeostasis. Explain the process and importance of negative feedback. Describe the levels of organization within the human body. Identify the body systems, name the two most important and recognize the interrelationship between all body systems. Describe anatomical position. Define anatomical terms of direction. Describe the standard planes of reference in the body. Name and locate the principle cavities of the body and identify the main viscera within. Name and locate the regions of the abdomen. Name and locate the quadrants of the abdomen 	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 1 Online Units 1 and 2 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning

Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
2	<p>UNIT 2 – THE CHEMICAL BASIS OF LIFE</p> <ol style="list-style-type: none"> 1. Identify the primary elements of the human body. 2. Discuss the term trace element. 3. Explain the significance of water in the human body. 4. Identify the homeostatic amount of body water and its distribution. 5. Discuss the functions of water. 6. Identify the primary source of water intake and loss. 7. Define the term insensible water loss. 8. Explain the relationship between water intake and output in the body. 9. Define the term electrolyte and give examples. 10. Define the term ion and differentiate between anions and cations. 11. Identify the major cations and anions in the body. 12. Identify the major functions of sodium, potassium and calcium. 13. Identify the primary route of electrolyte intake and loss in the body. 14. Identify the chemical composition of intra and extracellular fluid. 15. Differentiate between acids and bases. 16. Define the term pH. 17. Describe the pH scale. 18. Explain the relationship between acids, bases and pH 19. Explain why small shifts in pH are significant. 	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 1 Online Units 1 and 2 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
2	<p>UNIT 2 – THE CHEMICAL BASIS OF LIFE (continued)</p> <p>20. Identify the homeostatic range of serum pH.</p> <p>21. Explain the importance of maintaining serum pH.</p> <p>22. Identify the primary mechanism that maintains serum pH.</p> <p>23. Name the main blood buffer system.</p> <p>24. Explain how buffers work.</p> <p>25. Identify the two body systems which assist in the maintenance of serum pH.</p> <p>26. Describe the structure of carbohydrates, lipids, proteins and nucleic acids.</p> <p>27. Name three types of fat.</p> <p>28. Describe saturated and unsaturated fats.</p> <p>29. Differentiate between essential and nonessential amino acids, complete and incomplete proteins.</p> <p>30. Explain the concepts of nitrogen balance.</p> <p>31. Differentiate between positive and negative nitrogen balance.</p>	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 1 Online Units 1 and 2 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
3	<p>UNIT 3 – CELLS</p> <ol style="list-style-type: none"> 1. Explain the concept of cell theory and the composite of the cell. 2. Describe the structure and explain the function of the cell membrane. 3. Describe the structure and function of cilia. 4. Describe and locate cytoplasm. 5. Describe the general structure and function of the following organelles: <ul style="list-style-type: none"> • ribosomes • centrioles • lysosomes • mitochondria 6. Differentiate between passive and active transport mechanisms. 7. Explain and give examples of: <ul style="list-style-type: none"> • Diffusion • Facilitated diffusion • Osmosis • Filtration 8. Explain the process and importance of the sodium potassium pump 	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 2 Online Units 3 & 4 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
3	<p>UNIT 3 – CELLS (continued)</p> <p>9. Explain the relationship between:</p> <ul style="list-style-type: none"> • .solute • Solvent • Osmotic pressure • Hydrostatic pressure <p>10. Identify the major effects of osmotic and hydrostatic pressure and their importance.</p> <p>11. Differentiate between isotonic, hypertonic and hypotonic and their effect on body cells.</p> <p>12. Define osmolality.</p> <p>13. Describe the general structure and function of the nucleus.</p> <p>14. Explain the relationship between chromosomes, DNA and genes.</p> <p>15. Identify the number and characteristics of human chromosomes.</p> <p>16. Explain how the ova / sperm and the 23rd male chromosome differs from the "norm".</p> <p>17. Differentiate between mitosis and meiosis.</p> <p>18. Discuss the concept of differentiation.</p>	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 2 Online Units 3 & 4 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
4	<p>UNIT 4 – CELLULAR METABOLISM</p> <ol style="list-style-type: none"> Identify the basic structure and general function of enzymes. Define the term catalyst and explain its relationship to enzymes. Explain the concept of “lock and key” and its relationship to enzymes. Recall the relationship between energy and survival. Recall the requirements necessary for the production of energy. Define the term cellular respiration. Differentiate between anaerobic and aerobic cellular respiration. Identify the end products of cellular respirations. Explain how energy is stored and released. Explain the cause and effect of lactic acid. Relate the lactic acid to oxygen debt. Explain the significance of using lipids and proteins as fuel for energy production. Outline the basic structure of DNA. Outline the significance of DNA replication. Identify the function of DNA. Explain the importance of structural and functional proteins. 	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 2 Online Units 3 & 4 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
5	<p>UNIT 5 – TISSUES</p> <ol style="list-style-type: none"> Recall the term tissue. Identify the four types of tissues. Identify the location and function of epithelial tissue. Discuss the characteristics of epithelial tissue. Classify the epithelial cells according to shape and layers. Identify the primary function and location of the following types of epithelial tissue. <ul style="list-style-type: none"> Simple squamous Stratified squamous Simple columnar Simple cuboidal Differentiate between exocrine and endocrine glands. Identify the structure, location and function of goblet cells. Distinguish between serous and mucous membranes in terms of structure, function and location. Describe the structure, location and function of matrix. Identify the location, types and functions of connective tissue. Discuss the characteristics of connective tissue. Discuss the properties of the two main fibres (collagen / elastin) of connective tissue. 	See posted readings web page	CLO: 1, 2 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 3 Online Units 5 & 6 5%</p> <p>Midterm Exam Units 1 - 6 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
5	UNIT 5 – TISSUES (continued) 14. Identify the functions of the cells (fibroblasts / macrophages / mast) found within connective tissue. 15. Identify the function of histamine and heparin. 16. Identify the main characteristics of fibrous connective tissue. 17. Identify the main functions of adipose tissue. 18. Discuss the characteristics of the three types of cartilage. 19. Recognize bone and blood as connective tissue.	See posted readings web page	CLO: 1, 2, 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	Formal Testing Test # 3 Online Units 5 & 6 5% Midterm Exam Units 1 - 6 35%
6	UNIT 6: THE SKIN AND THE INTEGUMENTARY SYSTEM 1. Identify the main accessory organs of the integumentary system. 2. Recognize the significance of the layers of the skin, describe the structure. 3. Identify the location and function of keratin and melanocytes. 4. Explain how skin is pigmented. 5. Identify the location, types and function of sensory receptors of the skin. 6. Identify the location and function of the sebaceous and sweat glands. 7. Identify the location, structure and function of the subcutaneous layer. 8. Explain the role of the skin in protection, sensation, Vitamin D synthesis and temperature regulation.	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	Formal Testing Test # 3 Online Units 5 & 6 5% Midterm Exam Units 1 - 6 35%
7	Midterm Exam – Units 1 – 6 Must be booked through your registering college, see EXAM instructions posted on Web site					Midterm Exam Units 1 - 6 35%

Evidence of Learning

Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
8	<p>UNIT 7: THE SKELETAL SYSTEM</p> <ol style="list-style-type: none"> 1. Define porosity and differentiate between cancellous and compact bone. 2. Differentiate between long, short, flat and sesamoid bones. 3. Describe the parts of the long bone. 4. Describe the matrix of bone. 5. Name three bone cells and identify the functions of osteoblasts and osteoclasts. 6. Differentiate between red and yellow marrow based on location and function in an adult. 7. Name three blood cells. 8. Explain the function of bone. 9. Discuss the relationship between osteoblasts, osteoclasts and serum calcium levels. 10. Define the terms ossification / osteogenesis and identify the basic principles related to bone growth. 11. Discuss the effect of age and exercise on bone. 12. Describe bones as levers. 13. Identify the main organ and accessory structures of the skeletal system. 14. Describe the structure and function of a ligament. 15. Locate and describe the following bones: <ul style="list-style-type: none"> • Cranium – frontal, parietal, temporal, sphenoid, ethmoid • Facial bones – zygomatic, maxilla, mandible, nasal, palatine, vomer 	See posted readings web page	CLO: 1- 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 4 Online Units 7 & 8 5%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
8	<p>UNIT 7: THE SKELETAL SYSTEM (continued)</p> <ul style="list-style-type: none"> • Ribs – true, false, floating • Sternum – manubrium, body, xyphoid process • Scapula – acromion process, glenoid cavity • Clavicle • Upper extremity – humerus, ulna, radius, carpals, metacarpals, phalanges • Pelvis – ilium, pubis, ischium, acetabulum, sacrum, coccyx, obturator foramen • Lower extremity – femur, patella, tibia, fibula, tarsals, metatarsals, phalanges <p>16. Describe the cranial sutures and explain their functions.</p> <p>17. Locate the sagittal, coronal and lamdoidal cranial sutures.</p> <p>18. Locate, describe and explain the significance of the anterior and posterior fonatanel.</p> <p>19. Describe the basic organization of the vertebral column.</p> <p>20. Describe the curves of the vertebral column and explain how the secondary curves develop.</p> <p>21. Describe a typical vertebrae.</p> <p>22. Locate, describe the basic structure and explain the function of intervertebral discs.</p> <p>23. Describe the annulus fibrosus and nucleus pulposus.</p> <p>24. Describe the structure of the pelvis.</p>	See posted readings web page	CLO: 1- 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 4 Online Units 7 & 8 5%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning

Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
8	<p>UNIT 7: THE SKELETAL SYSTEM (continued)</p> <p>25. Locate and describe the ischial tuberosities, ischial spines, sacral promontory and obturator foramen.</p> <p>26. Define a joint and describe the three categories of joints.</p> <p>27. Categorize joints according to mobility and structure.</p> <p>28. Describe the structure of a synovial joint.</p> <p>29. Describe, locate and identify the function of bursa.</p> <p>30. Describe the movements permitted by synovial joints.</p> <ul style="list-style-type: none"> • Flexion • Extension • Hyperextension • Circumduction • Abduction • Adduction • Supination • Pronation • Plantar flexion • Dorsiflexion • Inversion • Eversion <p>31. Describe the structure, movements permitted, name the ball and socket and hinge joints.</p>	See posted readings web page	CLO: 1- 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 4 Online Units 7 & 8 5%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
8	<p>UNIT 7: THE SKELETAL SYSTEM (continued)</p> <p>31. Describe the structure, movements permitted, name the ball and socket and hinge joints.</p> <p>32. Identify the specific structures which articulate to form the hip and shoulder joints.</p> <p>33. Describe the knee joint.</p>	See posted readings web page	CLO: 1- 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	Formal Testing Test # 4 Online Units 7 & 8 5% Final Exam Units 7 - 12 35%

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
9	<p>UNIT 8 – THE MUSCULAR SYSTEM</p> <ol style="list-style-type: none"> Discuss the characteristics of muscle: <ul style="list-style-type: none"> Excitability Extensibility Elasticity Contractility Identify the three types of muscle tissue, describe their characteristics and functions. Discuss the major functions of muscle. Identify the main organ and accessory structures of the muscle system. Explain why muscle is an organ. Identify the structure and function of tendons. Describe the organization of a skeletal muscle. Explain the relationship between the muscle and nervous systems. Explain the relationship between the neuromuscular junction, synapse, motor neuron, vesicles, neurotransmitters, muscle fibre, motor end plate and receptors. Explain the role of neurotransmitters in muscle contraction. Name the body's main neurotransmitter. Outline the process of muscle contraction and relaxation. Identify the role of calcium in muscle contraction. 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 4 Online Units 7 & 8 5%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
9	<p>UNIT 8 – THE MUSCULAR SYSTEM (continued)</p> <p>14. Explain how threshold stimulus and the all or none principle relate to muscle contraction.</p> <p>15. Discuss the effect of exercise on muscles.</p> <p>16. Locate the major muscles:</p> <ul style="list-style-type: none"> • Head and neck – masseter, temporalis, trapezius, sternocleidomastoid, • Trunk – abdominals, pectoralis major • Upper extremities – biceps, triceps, deltoid, latissimus dorsi • Lower extremities – iliopsoas, gluteus maximus, the adductors, the hamstrings, the quadriceps, calcaneal tendon <p>17. Identify the muscles which operate the following joints:</p> <ul style="list-style-type: none"> • Jaw • Neck • Shoulder • Elbow • Wrist • Hip • Knee • Ankle <p>18. Locate and describe the organization of the gluteal muscles.</p> <p>19. Locate, describe the structure and function of the diaphragm.</p>	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 4 Online Units 7 & 8 5%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
9	UNIT 8 – THE MUSCULAR SYSTEM (continued) 20. Define the term hiatus and explain the relationship to the diaphragm. 21. Describe the basic organization of the abdominal muscles. 22. Describe the location and the function of the inguinal canals. 23. Locate and describe the muscles of the pelvic floor, identify the structures.	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	Formal Testing Test # 4 Online Units 7 & 8 5% Final Exam Units 7 - 12 35%

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
10	<p>UNIT 9 – THE NERVOUS SYSTEM INTRODUCTION</p> <ol style="list-style-type: none"> 1. Identify the location of nerve tissue. 2. Discuss two properties common to nerve tissue. 3. Identify the main function of the nervous system. 4. Explain the properties of responsiveness. 5. Explain the function of receptors and effectors. 6. Identify the effectors of the body. 7. Identify the body system that works in conjunction with the nervous system. 8. Contrast the effect and response times of these system. 9. Describe the divisions of the nervous system. 10. Identify the two groups of cells which make up nervous tissues and identify their functions. 11. Describe the structure and function of each part of the neuron. 12. Describe the location and function of myelin. 13. Differentiate between white and gray matter. 14. Classify neurons according to structure and function. 15. Identify the relationship between structural and functional neurons. 16. Describe the pathway of a nerve impulse from receptor to effector. 17. Describe how neurons are organized. 18. Distinguish between nerve and tract, ganglion and nucleus. 19. Differentiate between sensory, motor and mixed nerves. 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
10	<p>UNIT 9 – THE NERVOUS SYSTEM INTRODUCTION</p> <p>20. Describe the events involved in the initiation and transmission of a nerve impulse.</p> <p>21. Differentiate between continuous and salutatory conduction.</p> <p>22. Discuss the term refractory period.</p> <p>23. Define and describe the process of synaptic transmission.</p> <p>24. Explain the effect of calcium on nerve cells.</p> <p>25. Discuss the role of neurotransmitters</p> <ul style="list-style-type: none"> • Endorphins • Enkephalins • Serotonin • AcCH • Adrenaline • Noradrenaline • Dopamine <p>26. Explain the characteristics of a reflex arc.</p> <p>27. Identify the parts of a reflex arc and explain the function of each.</p> <p>28. Explain the function of reflexes.</p> <p>29. Discuss the process of neuron regeneration.</p>	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
10	<p>UNIT 9 – THE NERVOUS SYSTEM INTRODUCTION</p> <p>30. Identify the location and functions of the following neuroglia:</p> <ul style="list-style-type: none"> • Schwann cell • Oligodendrocyte • Microglia • Astrocyte <p>31. Describe and explain the blood brain barrier.</p>	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
11	<p>UNIT 10 – CNS</p> <ol style="list-style-type: none"> Describe the structures that protect the brain and spinal cord. Locate and describe the subarachnoid, subdural and epidural spaces. Name and locate the major divisions of the brain. Identify the structure and function of the cerebrum. Explain why the cerebral hemispheres “control” the opposite side of the body. Identify the cerebral hemisphere which dominates motor and language function. Identify the structure and function of the reticular activating system. Identify the location and function of the limbic system Identify the location and function of the limbic system Describe the structure and function of the spinal cord. Name the main descending and ascending tracts. Differentiate between pyramidal and extrapyramidal tracts. Discuss the location, formation, circulation and reabsorption of cerebrospinal fluid. Identify the appearance, amount and composition of CSF. 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
12	<p>UNIT 11 – THE PERIPHERAL NERVOUS SYSTEM.</p> <ol style="list-style-type: none"> Identify the number, origin and type of the cranial nerves, explain their general function Identify how the cranial nerves were numbered. Identify the number, origin, and the nerve type of the spinal nerves, explain their general function and describe how they access the spinal cord. Explain how the spinal nerves are numbered and named. Define and describe how a nerve plexus is formed. Name the major nerve plexuses, identify the regions of the body they supply. Identify the location served by the following nerves: <ul style="list-style-type: none"> Phrenic Sciatic Pudanal nerves. Recall the difference between the somatic and the autonomic systems. Contrast the somatic and autonomic nervous systems including number of neurons and location of cell bodies. Recall the general function of the sympathetic and parasympathetic systems. Identify the effectors supplied by the sympathetic and parasympathetic systems. 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
12	<p>UNIT 11 – THE PERIPHERAL NERVOUS SYSTEM.</p> <p>12. Explain the effects of the sympathetic and parasympathetic innervations on the following organs:</p> <ul style="list-style-type: none"> • Lungs • Heart • Serum glucose • Blood vessels • Pupils • Sweat glands • Digestive system • Urinary system <p>13. Explain the relationship between the adrenal medulla and the sympathetic nervous system.</p> <p>14. Contrast the sympathetic and parasympathetic nervous system according to:</p> <ul style="list-style-type: none"> • Origin of fibres • Extent and duration of effect • neurotransmitter <p>15. Differentiate between cholinergic and adrenergic fibers.</p>	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 5 Online Units – 9 - 11 8%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
13	<p>UNIT 12 – SOMATIC AND THE SPECIAL SENSES</p> <ol style="list-style-type: none"> 1. Recall the functions of receptors. 2. Describe the five major types of sensory receptors and identify the location of each. 3. Define sensation and explain how it occurs. 4. Recall the role of thalamus in sensation. 5. Explain what referred pain and how it occurs. 6. Outline the process of smell and taste. 7. Recall the cranial nerve for hearing and equilibrium. 8. Identify the pathway of sound through the ear. 9. Identify the structures within the ear responsible for maintaining equilibrium. 10. Recall the cranial nerve responsible for: <ul style="list-style-type: none"> • Sight • The lens • The pupil • The external muscles of the eye 11. Identify the accessory structures of the eye and discuss their functions. 12. Describe the location of the eye. 13. Name, locate and identify the functions of the main components of the eye. 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	<p>Formal Testing Test # 6 Online Units - 12 2%</p> <p>Final Exam Units 7 - 12 35%</p>

Evidence of Learning						
Week	Intended Learning	Resources and References	Learning Outcomes References	Intended Learning Activities	Assessment	Evaluation and Weighting
13	UNIT 12 – SOMATIC AND THE SPECIAL SENSES 14. Explain the physiology of the vision: <ul style="list-style-type: none"> • Refraction • Accommodation • Retinal images • Visual pathways • 3D 	See posted readings web page	CLO: 1 - 4 EEO: 6, 7, 8	Cam clips online lectures Power point presentation Course notes Online learning activities Evolve website	Online quiz	Formal Testing Test # 6 Online Units - 12 2% Final Exam Units 7 - 12 35%
14	Final Exam – Units 7 - 12 Must be booked through your registering college, see EXAM instructions posted on Web site					

Course outlines are planning guidelines; actual delivery of content may vary with circumstances. Students will be notified in writing of changes that involve the addition or deletion of content, learning outcomes or evaluation, prior to changes being implemented.

Professors are responsible for following this outline and facilitating the learning as detailed in this outline.

Evaluation Criteria:

(A full description of the Academic Appeals Process can be found online at http://www.durhamcollege.ca/EN/main/about_us/governance/policies/academic_policy.php)

Test one – Units 1 & 2 online	Target date Week 3 5%
Test two – Units 3 & 4 online	Target date Week 5 5%
Test three – Units 5 & 6 online	Target date Week 7 5%
Midterm Exam – Units 1- 6 proctored see EXAM instructions for details to book	Target date Week 7 35%
Test four – Units 7 & 8 online	Target date Week 9 5%
Test five – Unit 9 – 11 online	Target date Week 13 7%
Test six – Unit 12 online	Target date Week 14 3%
Final Exam – Units 7 – 12 proctored see EXAM instructions for details to book	Must be completed by course end date 35%
Total	100%

Notes:

This course is a pre- requisite for Anatomy & Physiology II

Required Text(s) and Supplies:

Thibodeau, G.A. & Patton K. (2012). *Anatomy & Physiology* (8th ed)
Sr. Louis: Missouri

Policies and Expectations for the Learning Environment:

General Policies and Expectations:

General College policies related to <ul style="list-style-type: none">• Acceptable Computer Use• Academic Policies• Academic Honesty• Student Code of Conduct• Students' Rights and Responsibilities can be found on-line at http://www.durhamcollege.ca/academicpolicies	General policies related to <ul style="list-style-type: none">• assignments• attendance/online course management• examinations and missed final examinations• tests can be found below.
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School of Continuing Education General Policies and Expectations:

Academic Honesty

Please refer to the college website for definitions of plagiarism and academic integrity. This is carefully monitored by all professors. http://www.durhamcollege.ca/EN/main/about_us/governance/policies/academic_policy.php

Assignments

Assignments are due on their due dates. Late assignments will be given a mark of zero unless otherwise discussed with your course instructor. The student must communicate with their instructor within 24 hours of the assignment due date. An extension may be granted if the student has a medical emergency or illness documented by a doctor's note. This note must be submitted to the student's registering college. If an extension is granted, the maximum period to submit the late assignment will be one week after the original due date.

While you may discuss with others how to approach the assignments, the work you submit must be your own. There will be no make-up assignments. It is the student's responsibility to keep track of all returned assignment marks.

Attendance/Online Course management

You are expected to work on or go online (for an online course) to the course at least twice a week. It is your responsibility to ensure you read all information posted on your online course or provided in your correspondence package. Each lesson builds on the skills learned in the previous lessons. If you miss a topic you will be less able to complete subsequent assignments. Success in the course depends on regularly checking the course online, participation in discussion boards/chats, and completion of homework and assignments.

Final Examinations

Final examinations must be written no later than the Saturday following the official end date of the course. Exams must be scheduled no later than five (5) college days prior to the date you wish to write. Exams are scheduled by the student using the online system at http://www.durhamcollege.ca/coned/EN/main/online_education/gettingstarted/examinfo.php

Students are responsible for attending final examinations as scheduled.

Proctored Exams

For those students who live outside a 100 km radius of Oshawa, you can arrange to write your final exam(s) at your local college, or if none within 100 km, under the supervision of a proctor. The student is responsible for obtaining a professional to act as the proctor (approved by Durham College) and any additional fees incurred, i.e. proctor fees and/or exam courier fees.

If you are using a proctor, a proctor form must be completed and returned to us via fax at 905.721.3195 or via e-mail at laurel.higgon@durhamcollege.ca. The form can be found on the website as noted above under the Final Examinations section. Print it out, complete and fax, or complete online and return to us via email.

NOTE: Proctor forms must be received in the Distance Education office **at least ten (10) business days prior** to your scheduled exam date.

Missed Final Examinations

If for the following reasons students are unable to attend their **scheduled final** in-person examination, he/she must contact the distance education office immediately to schedule a make-up final examination. Make-up final examinations will be done in accordance with the course outline and must be scheduled and re-written within two (2) college days of the date of the original exam date. A \$50 non-refundable fee will be charged.

1. Medical reason (Doctor's note is required)
2. Employment reason (e.g. your job is taking you out-of-town; employer's note is required)
3. Death in the family (copy of the death certificate/notice is required)

Tests/Quizzes

1. Tests/quizzes must be written during the scheduled test time.
2. Students are required to contact the professor within twenty-four hours of the time/day of the test if unable to be in attendance for a test/quiz. Email messages are an acceptable form of contact. A failure to comply will result in a mark of zero for that test/quiz. Make-up tests/quizzes will not be given.
3. Given compliance with (2), the weighting of a missed test/quiz may be applied to the final examination or the weighting of such other evaluation items as the professor may select will be increased.
4. If one test/quiz has already been missed, any subsequently missed tests/quizzes will be assigned a mark of zero.

Course Specific Policies and Expectations:

1. The student is expected to demonstrate respect for all in the online learning environment.
2. Check email frequently for updated instructions and refer to each chapter for specific preparation required.
3. The professor is available via email.
4. Quizzes and the three term tests are completed and submitted online.

5. The final exam is comprehensive, computer based, in person and booked through your registering College.
 6. Students are expected to check email daily for messages. All email correspondence must be done through College professional sources, personal email such as MSN or Yahoo may not be recognized through the College server.
 7. As an online course, basic computer skills and equipment are required. The student is responsible to check with Ontario Learn policies regarding to see if their home computer has the capacity to manage this course. Basic computing, keyboarding, mousing and word processing skills as well as web browsing, sending and receiving emails are necessary.
 8. Term tests are multiple choice, online, timed and completed online as posted.
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General Course Outline Notes:

1. *Students should use the course outline as a learning tool to guide their achievement of the learning outcomes for this course. Specific questions should be directed to their individual professor.*
2. *The college considers the electronic format (i.e. MyCampus, DC Mail or DC Connect) as the primary channel of communication. Students should check the sources regularly for current course information.*
3. *Professors are responsible for following this outline and facilitating the learning as detailed in this outline.*
4. *Course outlines should be retained for future needs (i.e. university credits, transfer of credits etc.)*
5. *A full description of the Academic Appeals Process can be found at <http://durhamcollege.ca/gradeappeal>.*
6. *Faculty are committed to ensuring accessible learning for all students. Students with permanent disabilities who require academic accommodations in accordance with the Ontario Human Rights Code should register with the Centre for Students with Disabilities (CSD) to initiate in-class accommodations. The CSD is located in room SW116, Oshawa Campus (or room 180, Whitby Campus). Call 905-721-3123.*
7. *Durham College is committed to the fundamental values of preserving academic integrity. Durham College and faculty members reserve the right to use electronic means to detect and help prevent plagiarism. Students agree that by taking this course all assignments could be subject to submission either by themselves or by the faculty member for a review of textual similarity to Turnitin.com. Further information about Turnitin can be found on the **Turnitin.com** Web site.*

Outline Template v11.2.2013