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CURRICULUM GUIDE: OFFICIAL COURSE OUTLINE

Course Code	BIOL 205	Course Title	Human Physiology			
Credit Value	3	Department	Department of Biology			
No. of weeks	14	Hrs. per week	*Lecture*	*Tutorial*	*Laboratory*	*Total*
			3	0	0	3
Course Description	This course provides a foundation for understanding human physiology focusing on the main systems of the body including the nervous, endocrine, respiratory, excretory and digestive systems. Emphasis is placed on the roles of the major cells and tissues in the physiology of each organ system. A key goal of this course is to foster an understanding of the integrative nature of these organ systems. The role of organ systems in normal physiology and in disease will be explored as well as the role of medicine to treat abnormal physiological states.					
Prerequisite(s)	ENGL 099, BIOL 101 and BIOL 102					

Initial Articulation Targets	*UBC*	*SFU*	*UVic*	*UNBC*	*TRU*
	BIOL 1st (3)	BPK 2XX (3)	BIOL 365 (1.5)	HHSC 1XX (3)	BIOL 2XX0 (3)
	UBC-O	*TRU-OL*	*CAPU*	*UFV*	*KPU*
	BIOL 1st (3)	BIOL 2XX1 (3) May not receive additional credit for TRU-OL BIOL 1593 or 1693	BIOL 2XX (3)	BIO 280 (3)	BIOL 1XX1 (3)
	For updated information on the transferability of this course, please consult the BC Transfer Guide, www.bctransferguide.ca				

Learning Objectives /Outcomes

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

- Describe the main roles of each of the systems of the human body.
- Discuss the structure and roles of the main cells and tissues in each system.
- Explain the interactions between the systems necessary to maintain homeostasis in the human body.
- Describe how altered physiological states can lead to disease and how these can be remedied.
- Calculate the range of normal physiological parameters in each system (e.g. glomerular filtration rate, blood pressure, etc.).
- Explain how external factors (diet, environment) can alter physiological systems.

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Content	Overview of human physiology and its role in health and disease: • Introduction to Physiology (Chapter 1): Historical perspectives; Understanding experimental data. • Major Tissues of the Human Body (Chapter 3): Epithelia; Connective tissue; Excitable tissue's. • Endocrine System (Chapter 7): Introduction to major endocrine hormones and their roles. • Nervous and Sensory Physiology (Chapter 8-10, 11): Organization of the Nervous System; Electrical signals in Neurons; Cell-Cell communication in the NS; The Central and Peripheralm NS; Somatic senses; Chemoreception; Hearing and equilibrium; Vision. • Muscle Physiology (Chapter 12): Skeletal muscle organization; Sliding filament theory; Smooth muscle physiology. • Cardiovascular Physiology (Chapter 14, 15): Cardiac muscle; Heart as a pump; Blood flow and pressure. • Respiratory Physiology (Chapter 17, 18): Mechanics of Breathing; Gas exchange and transport. • Excretion and Osmoregulation (Chapter 19, 20): Kidney anatomy and function; Water balance; Electrolyte balance. • Digestive Physiology (Chapter 21, 22): Digestive system anatomy; Mechanisms of digestion; Mechanisms of absorption; Metabolism.
Method of Instruction	Classroom sessions (3 hours per week). Students are expected to have read the appropriate chapters, done the extra assigned readings and questions before classes. In the classroom the students will be asked to discuss the readings and answer the questions. The students are asked to participate in an interactive web-based tutorial at home which will be discussed and tested in class. Challenge problems from the textbook are discussed to focus on key physiological issues relevant to each chapter.

Required Texts	Silverthorn Unglaub, Dee. *Human Physiology: An Integrated Approach with IP-10.* San Francisco: Benjamin Cummings (Pearson Publishing), 2009.
Learning Resources	**Text Resources:** Caccavelli, Tomeo. *Human Genome: Components, Structural/Functional Disorders & Ethical Issues*. New York: Nova Science Publishers, 2013. Cameron, Noël. *Human Growth And Development*. Amsterdam: Academic Press, 2002. Fain, Gordon L., Margery J. Fain, and Thomas O'Dell. *Molecular And Cellular Physiology Of Neurons*. Cambridge, Massachusetts: Harvard University Press, 2014. Print.

Holland, I. B., and Kenneth J. Linton. *The ABC Transporters Of Human Physiology And Disease: Genetics And Biochemistry Of ATP Binding Cassette Transporters*. Hackensack, N.J: World Scientific Publishing Company, 2011.

Kelly, Evelyn B. *Encyclopedia Of Human Genetics And Disease*. Santa Barbara, Calif: Greenwood, 2013.

Marieb, Elaine Nicpon. *Anatomy & Physiology Coloring Workbook*. San Francisco: Pearson/Benjamin Cummings, 2009. Print.

Marieb, Elaine Nicpon, et al. *Human Anatomy & Physiology Laboratory Manual*. San Francisco: Pearson/Benjamin Cummings, 2008. Print.

Martini, Frederic, William C. Ober, and Judi Lindsley Nath. *Visual Anatomy & Physiology*. San Francisco: Benjamin Cummings, 2011. Print.

McDowell, Julie. *Encyclopedia Of Human Body Systems*. Santa Barbara: Greenwood, 2011.

Perrey, Stéphane, Olivier Hue, and Philippe Connes. *Exercise Physiology: From A Cellular To An Integrative Approach.* Amsterdam: IOS Press, 2010.

Pickles, James O. *An Introduction To The Physiology Of Hearing*. Bingley: Emerald Group Publishing, 2012.

Saladin, Kenneth S. *Anatomy & Physiology*. Dubuque: McGraw-Hill, 2010. Print.

Schalow, Giselher, and Corp e-libro. *Human Neurophysiology: Development And Repair Of The Human Central Nervous System*. Hauppauge, NY: Nova Science Publishers, Inc, 2013.

Shartava, Tsisana. *Biological Aspects Of Human Health And Well-Being*. New York: Nova Science Publishers, 2011.

Silverthorn, Dee Unglaub, and Bruce R. Johnson. *Human Physiology*. San Francisco: Pearson/Benjamin Cummings, 2010. Print.

Stanfield, Cindy L., et al. *Principles Of Human Physiology*. San Francisco: Pearson/Benjamin Cummings, 2008. Print.

Databases

Academic Search Premier
Biological and Agricultural Index Plus
General Science Full Text
Global Reference on the Environment, Energy, and Natural Resources (GREENR)
Health and Wellness Resource Centre
Science in Context
Science Reference Centre

Evaluation	*Component*	*% Value*

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	Quizzes Midterm exam Final Exam	20% 30% 50%

Course Designer(s)	Anthony Stea, Ph.D., Department of Biology, University of the Fraser Valley	College Approval	September 29, 2010
Consultant(s), *if applicable*	Dr. Mitra Panahi, Ph.D, Biology Department, Alexander College, Gregory Schmaltz, Ph.D., University of the Fraser Valley	Last Review	January 5, 2015
Dean Approval	Barbara Moon, Ph.D. Professor Emeritus, Department of Biology, University of the Fraser Valley	Next Review	January 5, 2020

Revision History	April 29, 2015-Library resources added by Librarians, AC August 9, 2019 – The course has been deactivated as of August 30, 2019, agreed by vote of the SASC member, Department Head, Dean and Registrar. Rationale for deactivation is that the course has never been offered, and has essentially replaced by newer courses BIOL 110 and BIOL 120. MB

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