

**The Hong Kong Polytechnic University
Hong Kong Community College**

Subject Description Form

Subject Code	CCN2233
Subject Title	Human Biology I
Level	2
Credit Value	3
Medium of Instruction	English
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	This subject enables students to acquire a basic understanding of the body as an integrated entity from cellular level to whole body and to appreciate the interrelationships between body systems as a whole. The study of this subject contributes to the students' acquisition of a general basis for further study in areas related to human biology.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ul style="list-style-type: none"> (a) appreciate and discuss the topics related to human biological science. (b) use appropriate terms to describe the human body, cell structure, and the basic metabolic processes of the organ systems studied. (c) identify and explain the intricate complexities of structure and function in the human body. (d) explain the basic pathological basis involving the selected body systems. (e) analyse the interrelationships between organ systems and physiological processes. (f) critically assess and evaluate mechanisms that maintain homeostasis in biological systems.
Subject Synopsis/ Indicative Syllabus	<p>Organisation of the Human Body</p> <ul style="list-style-type: none"> ▪ Structure and function of the cell: organelles, functions of the cells ▪ Histology: The study of tissues, cellular features and organisation ▪ Gross anatomy of organ systems

	<p>Regulation and Maintenance</p> <ul style="list-style-type: none"> ▪ Cardiovascular system: basic anatomical structure of the cardiovascular system, blood vessels, systemic and pulmonary circulations, cardiac output, cardiac cycle, blood pressure, control of heart beat, electrical activity of heart and electrocardiogram; Prevention of cardiovascular diseases; Regulation of blood flow; Nervous and endocrine control of cardiac function ▪ Blood cells, blood composition, hemostasis, blood typing and blood transfusion ▪ Lymphatic system and immunity: inflammation reactions, immune cells, lymphatic system, antibodies, non-specific immunity responses; Specific immunity responses, active and passive immunity; Diseases caused by immune system such as allergies, autoimmune diseases and immune deficiency <p>Support and Movement</p> <ul style="list-style-type: none"> ▪ Integumentary system: structure and functions of hair, skin, nails; Disorders of the skin such as skin cancer, burns and wound healing ▪ Skeletal system: structures and functions of bones, neural control of muscle contraction, structure of bone and cartilage, growth and remodeling of bone; calcium homeostasis, functional anatomy of the limbs and spine, articulation and movement ▪ Muscular system: functions and support of muscle ▪ Pathogenesis and manifestations of common neuromuscular diseases such as tetanus, muscular dystrophy and myasthenia gravis. ▪ Pathogenesis and manifestations of common musculoskeletal disorders such as fractures, dislocation of joints, sprain & strains, tendinitis, rickets, osteoporosis, osteoarthritis, rheumatoid arthritis and gout. 																						
<p>Teaching/Learning Methodology</p>	<p>Lectures will focus on the introduction of the anatomy followed by elaboration of the key concepts and underlying principles of physiology. Clinical applications related to the basic human biology knowledge will be discussed during lectures to enhance students' acquisition of basic concepts and their relevant applications.</p> <p>Tutorials will provide students with the opportunity to engage in more active learning. Multimedia aids such as interactive videos and CD-ROMs will be used. Virtual laboratory sessions will be designed to supplement the theoretical content taught in lectures. These learning activities are to develop students' abilities in identifying the relationship between structure and physiology, and analysing the mechanism in maintaining homeostasis.</p>																						
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<p>A variety of assessment tools will be used to develop and assess students' achievement of the subject intended learning outcomes.</p> <table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> </tr> </thead> <tbody> <tr> <td>Continuous Assessment*</td> <td>60</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed						a	b	c	d	e	f	Continuous Assessment*	60						
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	<ul style="list-style-type: none"> ▪ Test 25 ✓ ✓ ✓ ▪ Assignment 1 15 ✓ ✓ ✓ ✓ ▪ Assignment 2 15 ✓ ✓ ✓ ✓ ✓ ▪ Participation 5 ✓ ✓ ✓ ✓ ✓ ✓ Final Examination 40 ✓ ✓ ✓ ✓ ✓ ✓ Total 100 	
	<p><i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i></p> <p>To pass this subject, students are required to obtain Grade D or above in both the Continuous Assessment and Final Examination.</p>	
Student Study Effort Expected	Class contact	Hours
	▪ Lecture	26
	▪ Tutorial/ Laboratory	13
	Other student study effort	
	▪ Self-study	52
	▪ Continuous Assessment	39
	Total student study effort	130
Reading List and References	<p>Recommended Textbook</p> <p>Longenbaker, S. (2014). <i>Mader's Understanding Human Anatomy & Physiology</i>. (8th ed.), McGraw-Hill.</p> <p>Martini, F.H. (2009). <i>Fundamentals of anatomy and physiology</i>. (9th ed.), Benjamin Cummings.</p> <p>Starr, C. & McMillan, B. (2012). <i>Human Biology</i>. (9th ed.), Brooks/Cole.</p> <p>References</p> <p>Abrahams, P. H., Hutchings, R. T., & Marks, Jr. S. C. (2008). <i>McMinn's colour atlas of Human Anatomy</i>. (5th ed.), Mosby Elsevier.</p> <p>Gosling, J.A., Harris, P.F., Humpherson, J. R., Whitmore, I., & Willan, P. L. T. (2008). <i>Human anatomy color atlas and text</i>. (5th ed.), Mosby.</p> <p>Marieb, E. N. (2010). <i>Human anatomy and physiology</i>. (8th ed.), Benjamin Cummings.</p> <p>Moore, K. L., Dalley, A. F., & Agur, A. M. R. (2009). <i>Clinically oriented anatomy</i>. (6th ed.), Lippincott Williams & Wilkins.</p>	

	<p>Rosto, E. (2014). <i>Pathophysiology Made Incredibly Easy</i>. (5th ed.), Wolters Kluwer Health/Lippincott Williams & Wilkins.</p> <p>Saladin, K. S. (2011). <i>Human anatomy and physiology</i>. (5th ed.), McGraw Hill.</p> <p>Tortora, G.J. & Grabowski, S. R. (2012). <i>Principles of anatomy and physiology</i>. (13th ed.), John Wiley and Sons.</p> <p>Schneider, R. E., Hankin, M. H., Morse, D. E. & Brnnette-Clarke, C. A. (2008). <i>Anatomy & physiology revealed: An interactive cadaver dissection experience</i>. (2nd version) [CD-ROM], McGraw -Hill.</p> <p>Vanputte, C., Regan, J. & Russo, A. (2010). <i>Seeley's anatomy and physiology</i>. (9th ed.), McGraw Hill.</p> <p>Waugh, A. (2010). <i>Ross and Wilson anatomy and physiology in health and illness</i>. (11th ed.), Churchill Livingstone.</p>
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