

1.	Name of Course/Module/Subject		Human Anatomy and Physiology							
2.	Course/Subject Code		HAP1019							
3.	Status of Subject		Core for B. Sc Bioinformatics							
4.	MQF Level/Stage		Bachelor – MQF Level 6							
5.	Version		Date of previous version :							
			August 2011							
6.	Pre-Requisite/Requirement for Registration		Date of current version :							
			June 2013							
7.	Name(s) of academic/teaching staff		NONE							
8.	Semester and Year offered		Ms Ong Chia Sui Mr Cheong Soon Fatt Mr Leonard Yew Chi Boon							
9.	Objective of the course/module/subject in the programme :		Trimester 2, Year Beta							
10.	Justification for including the subject in the program :		Objective of the course/module/subject in the programme :							
			1. To describe the structure and function of major organ systems. 2. To teach the fundamentals of physiological processes of these systems. 3. To relate structure to function.							
11.	Subject Learning Outcomes :		Domain			Level				
			Cognitive			Level		1		
12.	LO1		Describe the basic organisation of the human body and organ systems			Cognitive			Level 1	
	LO2		Describe the functions of organ systems in the human body			Cognitive			Level 1	
	LO3		Explain interrelationships between different organ systems			Cognitive			Level 2	
	LO4		Identify control mechanisms operating in the human body			Cognitive			Level 4	
12.		Mapping of Learning Outcomes to Programme Outcomes :								
		Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
		LO1	X	X						
		LO2	X	X						
		LO3	X	X						
		LO4	X	X						

	Percentage	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0		
13.	Assessment Methods and Types :										
	Method and Type	Description/Details					Percentage				
	Lab	Lab Reports					10%				
	Assignment	Written report, group project					10%				
	Quiz	Written examination					30%				
	Final Exam	Written examination					50%				
14.	Mapping of Assessment Components to Learning Outcomes:										
	Assessment Components				%	LO1	LO2	LO3	LO4		
	Final Exam				50	55.6	55.6	55.6	55.6		
	Assignment				10			11.1	11.1		
	Quiz				30	33.3	33.3	33.3	33.3		
	Lab Reports				10	11.1	11.1				
	Total				100%	100%	100%	100%	100%		
15.	Details of Subject:										
	Topics						Mode of Delivery				
							Lecture	Lab	Tutorial		
	1. Organization of the Body i. Introduction to body organization ii. The Tissue level of organization						1	2			
	2. The Nervous System i. Central nervous system ii. Function of neurons iii. Peripheral nervous system iv. Reflexes						3	2			
	3. Skin and Sensory Systems i. Touch/Pain, Vision, Hearing/Balance, Olfaction, Taste						3	2	1		
	4. Musculoskeletal System i. Bones, Muscles, Joints						3	1			

	<p>5. The Cardiovascular System</p> <p>Anatomy</p> <p>i. The Heart</p> <ul style="list-style-type: none"> • Structure – chambers and valves • Conduction system • Great vessels of the heart • Blood supply of the heart <p>ii. The Circulatory System</p> <ul style="list-style-type: none"> • Types of blood vessels • Major arteries and veins • The pulmonary and systemic circulation <p>Physiology</p> <p>i. Physiology of the Heart</p> <ul style="list-style-type: none"> • Electrical properties and conduction • Control of the heart – neural and endocrine • Regulation of cardiac output <p>ii. Physiology of Circulation</p> <ul style="list-style-type: none"> • Principles and regulation of blood flow and blood pressure 	4	3	
	<p>6. The Respiratory System</p> <p>Anatomy</p> <p>i. The Respiratory Tract</p> <p>ii. The Structure of the Lungs</p> <p>Physiology</p> <p>i. Respiration and Control of Breathing</p> <p>ii. Gas Transport & Exchange</p> <p>iii. Adjustment during Exercise and at High Altitudes</p>	2	2	
	<p>7. The Urinary System</p> <p>Anatomy</p> <p>i. Anatomy of the Kidney</p> <p>ii. The Nephron</p> <p>iii. Accessory Excretory Structures</p> <p>Physiology</p> <p>i. Physiology of the Kidneys</p> <ul style="list-style-type: none"> • Glomerular filtration • Tubular secretion and reabsorption • The counter current mechanism • Plasma clearance 	2	2	1

	8. The Gastrointestinal System Anatomy i. Anatomy of the <ul style="list-style-type: none"> • Pharynx and oesophagus • Stomach • Small and large intestine • Liver and pancreas • Physiology i. Digestion and absorption ii. Functions of the liver	2	1	
	9. The Reproductive Systems Anatomy i. Female Reproductive System <ul style="list-style-type: none"> • Ovary and uterus • Breast ii. Male Reproductive System <ul style="list-style-type: none"> • Testis and accessory structures iii. Development of the Reproductive Systems Physiology i. Spermatogenesis and Oogenesis ii. The Ovarian and Uterine Cycle iii. Physiology of Pregnancy iv. Changes at Puberty and Menopause	4	2	
	10. The Endocrine System i. Anatomy of major Endocrine System ii. Physiology <ul style="list-style-type: none"> • Chemistry of Hormone • Mechanisms of Hormone Action • Control of Hormone Release • The Hypothalamic-Pituitary Axis • Actions of Major Target Hormones 	4	1	1
	Total	28	18	3
16.	Total Student Learning Time (SLT)	Face to Face	Total Guided and Independent Learning	
	Lecture	28	28	
	Tutorials	3	3	
	Laboratory	18	9	
	Presentation	0	0	
	Assignment	1	10	
	Quiz	3	3	
	Final Exam	2	20	
	Sub Total	55	73	
	Total SLT	128/40 = 3.2		

17.	Credit Value	3
18.	Reading Materials :	
	Textbook:	Reference Materials:
	<ol style="list-style-type: none"> 1. <i>Seeleys Anatomy & Physiology 10th Ed.</i> VanPutte Cinnamon, Jennifer Regan, Andrew Russo, Philip Tate, Trent Stephens and Rod Seeley. McGraw Hill. 2013 2. <i>PhysioEx™ 9.0 for Human Physiology: Laboratory Simulations in Physiology (Version 9.0).</i> Peter Zao, Timothy Stabler, Lori Smith, Andrew Lokuta and Edwin Griff. Benjamin Cummings. 2011. 	<ol style="list-style-type: none"> 1. <i>Human Anatomy and Physiology.</i> 9th Edition. Elaine N. Marieb and Katja Hoehn. Benjamin Cummings, 2012.