

1.	Name of Course/Module	Introduction to Human Pathology
2.	Course Code	HPT 2029
3.	Status of Subject	Core for B. Sc Bioinformatics
4.	MQF Level/Stage	Bachelor Degree – MQF Level 6
5.	Version (state the date of the last Senate approval)	June 2012
6.	Requirement for Registration	HCB1019 Cell Biology HAP1019 Physiology and Anatomy of Major Organ Systems
7.	Name(s) of academic/teaching staff	Cheong Soon Fatt Ong Chia Sui Leila Hilout
8.	Semester and Year offered	Trimester 2 (Gamma level)
9.	Objective of the course/module in the programme :	
	<ol style="list-style-type: none"> 1. To provide an understanding of the basic mechanisms (general pathological processes) of diseases 2. To relate the cause and effects of disease to the underlying pathological process 3. To instruct to students on the structural changes (gross and histological) in, and how they relate to different general pathological processes 	
10.	Learning Outcomes :	
	<p>At the completion of the subject, students should be able to:</p> <p>LO1: Acquire appropriate knowledge of disease denomination and of medical terminology. (Cognitive, Level 1)</p> <p>LO2: Comprehend and relate the fundamental concepts underlying tissue injury and repair. (Cognitive, Level 2)</p> <p>LO3: Recognize and illustrate the etiology, clinical manifestation, pathogenesis, and the systemic and functional consequences of general pathologies. (Cognitive, Level 2)</p> <p>LO4: Recognize the role of gross, microscopic and ultra-structural changes in diagnostic pathology. (Cognitive, Level 3)</p>	
11.	Synopsis:	
	<p>The course covers basic pathological processes including Cell Injury and Cell Death, Cellular Adaptations, Acute and Chronic Inflammatory Response, Tissue Repair: Cellular Growth, Fibrosis and Wound Healing, Causative Agents of Tissue Injury, Diseases due to infectious agents, Disorders of Development and Growth, Neoplasia and Oncogenesis, and Disorders of the Immune System</p>	

	<p>Kursus ini merangkumi proses patologi yang asas termasuk kecederaan sel dan kematian sel, adaptasi sel, tindak balas radang yang kronik, pembaik pulih tisu, pertumbuhan sellular, fibrosis dan baik pulih luka, agen penyebab bagi kecederaan tisu, penyakit yang disebabkan oleh agen berjangkit, pembangunan dan pertumbuhan yang tidak teratur, "Neoplasia" dan "Oncogenesis", dan sistem imun yang tidak teratur.</p>		
12.	Mapping of Subject to Programme Outcomes :		
	Programme Outcomes		% of Contribution
	PO1: Apply soft skills in work and career related activities		43
	PO2: Demonstrate knowledge and understanding of fundamental concepts, principles and best practices		57
13.	Assessment Methods and Types :		
	Method and Type	Description/Details	Percentage
	Lab		10%
	Test /Quiz		30%
	Assignment	Report & Presentation	10%
	Final Exam		50%
14.	Details of Subject		
	Topics	Mode of Delivery	
		Lecture	Tutorial
	1. Basic principles in pathology	1	
	2. Response to injury <ul style="list-style-type: none"> i. Cell injury and cell death <ul style="list-style-type: none"> • Cell injury • Reversible responses to injury • Pigments • Crystals • Cell death (Necrosis) and apoptosis • Biochemical mechanism of cell death ii. Cellular adaptations <ul style="list-style-type: none"> • Cellular adaptive changes • Accumulations iii. The acute and chronic inflammatory response iv. Tissue repair: cellular growth, fibrosis and wound healing 	8	2

<p>3. Causative agents of tissue injury</p> <p>i. Abnormalities of blood supply</p> <ul style="list-style-type: none"> • Hemodynamic disorders • Thrombosis • Shock <p>ii. Nutritional disorders</p> <ul style="list-style-type: none"> • Additives and contaminants • Nutritional deficiencies • Mineral deficiencies • Obesity • Diet and systemic diseases • Chemoprevention of cancer <p>iii. Environmental pathology</p> <ul style="list-style-type: none"> • Occupational and environmental diseases • Common environmental and occupational exposures: <ul style="list-style-type: none"> - Tobacco - Alcohol abuse - Drug abuse - Exogenous estrogens and oral contraceptives - Outdoor air pollution - Indoor air pollution - Industrial exposure - Agriculture hazards - Natural toxins - Radiation injury - Electromagnetic field - Mechanical force - Thermal injuries <p>iv. Diseases due to infectious agents</p> <ul style="list-style-type: none"> • Mechanism of tissue damage in infection • Pathology of acute and chronic infections 	8	2
<p>4. Disorders of development and growth</p> <p>i. Genetic diseases</p> <p>ii. Pediatric diseases</p>	2	
<p>5. Neoplasia and oncogenesis</p> <p>i. Classification, nomenclature and epidemiology of neoplasm</p> <p>ii. Mechanism and causes of neoplasia</p> <p>iii. Biological and clinical effects of neoplasia</p>	4	1

	6. Immunological mechanism of disease i. Innate immunity ii. Adaptive immunity iii. Disorders of immunity	3	1
	Total	26	6
15.	Laboratory Lab 1: Microscopic examination of tissues Lab 2: Hemodynamic disorders Lab 3: Environmental pathology Lab 4: Laboratory information system		
16.	Total Student Learning Time (SLT)	Face to Face (Hour)	Total Guided and Independent Learning
	Lecture	26	26
	Tutorials	6	6
	Laboratory/Practical	12	6
	Presentation	-	-
	Assignment	-	10
	Mid Term Test	1	5
	Final Exam	2	20
	Quiz	3 times	3
	Sub Total	47	76
	Total SLT	123/40 = 3.08 => 3	
17.	Credit Value	3	
18.	Reading Materials :		
	Textbook	Reference Materials	
	1. <i>Robbins Basic Pathology. 8th ed.</i> Kumar, Cotran and Robbins. Elsevier, 2007.	1. <i>Pocket Companion to Robbins and Cotran Pathologic Basis of Disease, 7th ed.</i> Richard Mitchell, Vinay Kumar, Nelson Fausto & Abul Abbas. Elsevier, 2006.	
19.	Appendix (to be compiled when submitting the complete syllabus for the programme) :		
	1. Mission and Vision of the University and Faculty		
	2. Mapping of Programme Objectives to Vision and Mission of Faculty and University		
	3. Mapping of Programme Outcome to Programme Objectives		
	4. Programme Objective and Outcomes (Measurement and Descriptions)		