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| 1.  | Name of Course/Module   | Introduction to Human Pathology  |
| 2.  | Course Code   | HPT 2029   |
| 3.  | Status of Subject   | Core for B. Sc Medical information technology                                |
| 4.  | MQF Level/Stage   | Bachelor Degree – MQF Level 6  |
| 5.  | Version<br>(state the date of the last Senate approval)   | August 2011  |
| 6.  | Requirement for Registration  | HCB1019 Cell Biology<br>HAP1019 Physiology and Anatomy of Major Organ System |
| 7.  | Name(s) of academic/teaching staff  | 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"> <li>1. To provide an understanding of the basic mechanisms (general pathological processes) of diseases</li> <li>2. To relate the cause and effects of disease to the underlying pathological process</li> <li>3. To instruct to students on the structural changes (gross and histological) in, and how they relate to different general pathological processes</li> </ol>  |  |
| 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, pembaikan pulih tisu, pertumbuhan selular, 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>  |  |

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| 12. | Mapping of Subject to Programme Outcomes :  |                       |                          |
|     | Programme Outcomes  |                       | <b>% of Contribution</b> |
|     | 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<br>i. Cell injury and cell death <ul style="list-style-type: none"> <li>• Cell injury</li> <li>• Reversible responses to injury</li> <li>• Pigments</li> <li>• Crystals</li> <li>• Cell death (Necrosis) and apoptosis</li> <li>• Biochemical mechanism of cell death</li> </ul> ii. Cellular adaptations <ul style="list-style-type: none"> <li>• Cellular adaptive changes</li> <li>• Accumulations</li> </ul> iii. The acute and chronic inflammatory response<br>iv. Tissue repair: cellular growth, fibrosis and wound healing | 8                     | 2                        |

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|---|---|---|
| <p>3. Causative agents of tissue injury</p> <p>i. Abnormalities of blood supply</p> <ul style="list-style-type: none"> <li>• Hemodynamic disorders</li> <li>• Thrombosis</li> <li>• Shock</li> </ul> <p>ii. Nutritional disorders</p> <ul style="list-style-type: none"> <li>• Additives and contaminants</li> <li>• Nutritional deficiencies</li> <li>• Mineral deficiencies</li> <li>• Obesity</li> <li>• Diet and systemic diseases</li> <li>• Chemoprevention of cancer</li> </ul> <p>iii. Environmental pathology</p> <ul style="list-style-type: none"> <li>• Occupational and environmental diseases</li> <li>• Common environmental and occupational exposures: <ul style="list-style-type: none"> <li>- Tobacco</li> <li>- Alcohol abuse</li> <li>- Drug abuse</li> <li>- Exogenous estrogens and oral contraceptives</li> <li>- Outdoor air pollution</li> <li>- Indoor air pollution</li> <li>- Industrial exposure</li> <li>- Agriculture hazards</li> <li>- Natural toxins</li> <li>- Radiation injury</li> <li>- Electromagnetic field</li> <li>- Mechanical force</li> <li>- Thermal injuries</li> </ul> </li> </ul> <p>iv. Diseases due to infectious agents</p> <ul style="list-style-type: none"> <li>• Mechanism of tissue damage in infection</li> <li>• Pathology of acute and chronic infections</li> </ul> | 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 |

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|-----|---|---|---------------------------------------|
|     | 6. Immunological mechanism of disease<br>i. Innate immunity<br>ii. Adaptive immunity<br>iii. Disorders of immunity  | 3   | 1                                     |
|     | <b>Total</b>  | <b>26</b>   | <b>6</b>                              |
| 15. | Laboratory<br><br>Lab 1: Microscopic examination of tissues<br>Lab 2: Hemodynamic disorders<br>Lab 3: Environmental pathology<br>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   | <b>123/40 = 3.08 =&gt; 3</b>  |                                       |
| 17. | Credit Value  | 3   |                                       |
| 18. | Reading Materials :   |   |                                       |
|     | Textbook  | Reference Materials   |                                       |
|     | 1. <i>Robbins Basic Pathology. 8<sup>th</sup> ed.</i> Kumar, Cotran and Robbins. Elsevier, 2007.  | 1. <i>Pocket Companion to Robbins and Cotran Pathologic Basis of Disease, 7<sup>th</sup> 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)  |   |                                       |