1.	Name of Course/Module	Advanced Medical Information Systems
2.	Course Code	HIS3029
3.	Status of Subject	[Leave blank]
4.	MQF Level/Stage	Bachelor Degree – MQF Level 6
5.	Version (state the date of the last Senate approval)	[Leave blank]
6.	Requirement for Registration	HIS2019 Introduction to Medical Information Systems
7.	Name(s) of academic/teaching staff	to be appointed
8.	Semester and Year offered	[Leave blank]

9.	Objective of the course/module in the programme :
	In the post-genomic era, the next healthcare revolution is in health informatics. Building a sustainable health system for the 21st Century will require the reinvention of much of the present day system, and require the intelligent use of information and communication technologies to deliver high quality, safe, efficient and affordable health care. In this course, students will be exposed in depth to the current and potential technologies in health information systems.

10.	Learning Outcomes :
	At the completion of the subject, students should be able to: 1. describe the strategies and methodologies used in development, procurement and management of health IT 2. demonstrate proficiency in identifying, using and managing components of a health IT system. 3. discuss the issues of interoperability and systems security in health care. 4. discuss the legal and ethical issues related to health information. 5. discuss the emerging role of telecommunications and other technologies in health care.

11.	Synopsis:
	HIS 3029 exposes students to fundamental computer-based applications which support the adoption of IT in the healthcare setting. This course ranges from the organizational structure of healthcare to the emerging technologies for realization of patient-centered healthcare systems Subjek ini membolehkan pelajar memahami asas usul aplikasi komputer secara terperinci untuk mempercepatkan proses penggunaan teknologi informasi dalam bidang kesihatan. Bermula dari organisasi struktur ke teknologi – teknologi untuk merealisasikan sistem yang mengutamakan pesakit.

12.	Mapping of Subject to Programme Outcomes :	
	Programme Outcomes	% of Contribution
	PO1: [Leave blank]	40
	PO7: [Leave blank]	30
	PO8: [Leave blank]	30
	PO6: [Leave blank]	0
13.	Assessment Methods and Types :	

	Method and Type	Description/Details	Percentage
	Test		20%
	Quiz		10%
	Assignment	Report & Presentation	30%
	Final Exam		40%

14.			
	Details of Subject		

Topics	Mode of Delivery	
	Lecture	Tutorial
1.Healthcare IT vision This topic is an introduction to the new health vision, issues and challenges in the local and international scenario. Vision 2020 and how health informatics should play a role . Identify clinical champion and alignment of health IT plan. Other aspects to be covered include: information and control, strategic planning, leadership, motivation and employee development, uncertainty, conflict, ethics and social issues.	4	2
2.Healthcare system interoperability and communication A study of current and future healthcare system interoperability challenges as well as existing and emerging standards. Topics include: emerging medical technologies, bar coding and RFID, PDAs and wireless technologies, telehealth, smartcards, voice and handwriting recognition technologies, and standards such as HL-7, DICOM, ICD 10, LOINC.	6	3
3. Health Informatics projects and stakeholders Interaction with healthcare stake-holders and educating about health informatics. RFP and RFQ document preparation. Managing a new deployment and user support; managing technical glitches. Initiate the change in management, business process reengineering and workflow to engage management team and the user in the health IT system. Understand why many large scale information system implementations fail and how one can assist an organization facilitate the design or selection and successful implementation of software applications	4	2
4.Health IT Procurement and Evaluation The primary goal of this topic is to have students appreciate the dynamics and compromises which take place when a health care authority/facility selects information technology to primarily support its care-giving role, as opposed to its financial and management control roles. Students will be encouraged to think from a clinical (user / manager) point of view, as opposed to taking an information technology (technical / "techie") perspective. Calculations of return on investment for information technology projects in health related organizations	4	2

	5. Health Information System Design This topic deals with the concepts and techniques of modern systems design in the area of health informatics. At the basis of successful system development in healthcare is systems analysis and design. This involves methods of analysis for assessing the information needs of an organization and determining how computer systems can provide problem-solving help. System design involves specifying in detail how the components of systems should be implemented and should be based on an in-depth understanding of the healthcare problem obtained from systems analysis.	4	2
	6. Emerging Technologies in Health Informatics This topic deals with the concepts and innovation in Health Informatics, such as mobile technologies, speech technologies, decision support systems, artificial intelligence and natural language processing	4	2
	7. Legal and ethical issues This topic includes the legal and ethical issues related to health information management and the use of information technology in healthcare management and clinical practice – issues such as privacy, confidentiality and security related to health information systems.	2	1
	Total	**28**	**14**
15.	Tutorials		
	Parallel to the lecture topics		

16.	Total Student Learning Time (SLT)	Face to Face (Hour)	Total Guided and Independent Learning
	Lecture	28	28
	Tutorials	14	14
	Laboratory/Practical		
	Presentation		
	Assignment	-	10
	Mid Term Test	1	5
	Final Exam	2	20
	Quizzes	1	2
	Sub Total	46	79
	Total SLT	125/40 = 3.1 => 3	
17.	Credit Value	3	
18.	Reading Materials :		
	Textbook	Reference Materials	

	1. Edwards H. Shortliffe & James J. Cimino. *Biomedical Informatics 3rd edition* Springer 2006	1. Enrico Coiera. *Guide to health Informatics* Arnold, 2nd edition 2003. 2. Hsinchun Chen, Sherrilynne S. Fuller, Carol Friedman, William Hersh. *Medical Informatics: Knowledge Management and Data Mining in Biomedicine,* 1st edition, Springer, 2005. 3. Whetton, S. *Health Informatics: A socio-technical perspective*, Oxford University Press, Melbourne 2005 4. L. Johns: *Information Management for Health Professionals* (2nd Edition). Delmar (Thomson Learning), Albany, New York 2002 5. Engelbardt, S. and Nelson, R., (2002): *Health Care Informatics: An Interdisciplinary Approach*. Mosby, St Louis.
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. Progarmme Objective and Outcomes (Measurement and Descriptions)	