Mapping of COs to Assessment Rubrics:

	Internal Exam	Assignment	Lab Assessment	End Semester Examinations
CO 1	✓			✓
CO 2	✓	✓	✓	✓
CO 3	✓		✓	✓
CO 4	✓	✓	✓	✓

15. HEALTH INFORMATICS

Discipline	Computer Science				
Course Code	UK1MDCCSC105				
Course Title	Health Informatics				
Type of Course	MDC				
Semester	I				
Academic Level	1				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	3 hours	-	-	3 hours
Pre-requisites	Basic knowledge on health is desirable.				
Course Summary	Health informatics focuses on the use of information technology to improve healthcare delivery, patient outcomes, and population health. This course provides an overview of key concepts, methods, and technologies in health informatics, with a focus on practical applications and case studies.				

Detailed Syllabus:

Module	Unit	Content	Hrs (L)
I		**Overview**	9
	1	Introduction, Informatics Definitions, Background, Historical Highlights, Key Players in Health Information Technology, Organisations Involved with HIT, Health Informatics Resources, Future Trends.	
	2	Healthcare Data, Information and Knowledge: Definitions and Concepts- Data, Information and Knowledge, Informatics vs. Information Technology and Computer Science, Clinical Data Warehouses (CDWs), Difficulties of Informatics.	
II		**Healthcare Data Analytics and Electronic Health Records**	9
	3	**Healthcare Data Analytics:** Introduction, Terminology of Analytics, Challenges to Data Analytics, Research and Application of Analytics, Role of Informaticians in Analytics.	
	4	**Electronic Health Records:** Electronic Health Record Definitions, Need for Electronic Health Records, Institute of Medicine's Vision for EHRs, Electronic Health Record Key Components, Computerized Physician Order Entry (CPOE), Clinical Decision Support Systems (CDSS), Electronic Prescribing	
III		**Data Standards and Medical Coding**	9
	5	Introduction; **Content Standards**: Extensible Markup Language (XML), Health Level Seven (HL7), Digital Imaging and Communications in Medicine (DICOM); **Terminology Standards:** Logical Observations- Identifiers, Names and Codes (LOINC), RxNorm, Systematized Nomenclature of Medicine: Clinical Terminology (SNOMED-CT) , MEDCIN®	
	6	**Transport Standards:** EHR-Lab Interoperability and Connectivity Standards (ELINCS), IEEE 11073, National Council for Prescription Drug Programs (NCPDP).	

IV	**Health Information - Privacy, Security and Ethics**		**9**
	7	Introduction; HIPAA Review, Basic Security Principles, HIPAA, Meaningful Use, and the HITECH Act, Authentication and Identity Management, Security Breaches and Attacks.	
	8	Health Informatics Ethics: Informatics Ethics, International Considerations: Ethics, Laws and Culture, Codes of Individual Countries, Difficulties Applying Medical Ethics in the Digital World.	
V	**Flexi Module (Not included for end semester exam)**		**9**
	9	Consumer Health Informatics: The Origins of Current State of Consumer Health Informatics, Classification of Consumer Health Informatics Applications	
	10	Mobile Technology and mHealth: Mobile Health (mHealth), Mobile Telemedicine Projects	

References

Core

1. Robert E. Hoyt and Ann K. Yoshihashi, “Health Informatics Practical Guide for Healthcare and Information Technology Professionals”, Sixth Edition.

Additional

2. William Hersh, “Health Informatics: A Practical Guide"
3. Stephan P. Kudyba and Richard M. Hillestad, "Healthcare Informatics: Improving Efficiency through Technology, Analytics, and Management"

Case Study

1. Familiarize with any Health informatic systems
2. Familiarize with tools available in Health Informatic systems
3. Prepare a report on various Health Informatic systems.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO1	Explain the basic concepts of Health Informatics	U	PSO-1
CO2	Illustrate the role of Healthcare Data Analytics and Electronic Health Records	Ap	PSO-1, 3
CO3	Summarise Data Standards and Medical Coding concepts	U	PSO-1
CO4	Infer the role of privacy, security and ethics in health systems	U	PSO-1

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: HEALTH INFORMATICS

Credits: 3:0:0 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO1	Explain the basic concepts of Health Informatics	PO-6,7 PSO-1	U	F, C	L	-
CO2	Illustrate the role of Healthcare Data Analytics and Electronic Health Records	PO-4, 5, 6,7 PSO-1, 3	Ap	F, C, P	L	-
CO3	Summarise Data Standards and Medical Coding concepts	PO-6,7 PSO-1	U	F, C	L	-
CO4	Infer the role of privacy, security and ethics in health systems	PO-6,7, 8 PSO-1	U	F, C	L	-

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	-	-	-	-	-	2	1	-	2	-	-	-
CO 2	-	-	-	2	2	2	2	-	2	-	2	-
CO 3	-	-	-	-	-	2	1	-	2	-	-	-
CO 4	-	-	-	-	-	2	1	3	2	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Lab Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Case Study	End Semester Examination
CO 1	✓	✓		✓
CO 2	✓		✓	✓