BMS4001: MEDICAL INFORMATICS AND LABORATORY MANAGEMENT

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Medical Informatics and Laboratory Management

Subject Code
BMS - Biomedical Sciences
Course Number
4001

Academic Unit
Biomedical Sciences (BMS)

College/School
Jockey Club College of Veterinary Medicine and Life Sciences (VM)

Course Duration
One Semester

Credit Units
3

Level
B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course will introduce the recent development in the use of information technology in medical laboratories. Health informatics theories, revolutionary changes in technology, adequate skills of laboratory management and laboratory information systems (e.g. Electronic Health Record (EHR), Computerized Provider Order Entry (CPOE), Decision Support Systems (DSS)) will be covered.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Compare and interpret the results and information provided by different reporting systems			x	
2	Demonstrate ethical knowledge and behaviours required in laboratory practice and have sensitive manner on the use of patients' personal information		x	x	
3	Evaluate different Health Information Systems and recognize the functions of each system			x	
4	Create specific security profiles based on the requirement of the workplace			x	x
5	Critically evaluate and apply the basic principles learnt in the workplace			x	x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures and Tutorials	Lectures and Tutorials materials will enable students to acquire knowledge related to medical informatics and laboratory management	1, 2, 3, 4, 5	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	In class discussion and participation	1, 2, 3, 5	20	
2	Group Project	1, 2, 3	20	

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2-3

Additional Information for ATs

Minimum Passing Requirement: A minimum of 40% in continuous assessment as well as in examination, in addition to a minimum of 40% in continuous assessment and examination taken together.

Assessment Rubrics (AR)

Assessment Task

In class discussion and participation

Criterion

Ability to explain the report results in detail and the quality of your oral presentation and discussion

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Group Project

Criterion

Ability to explain the report results in detail and the quality of your oral presentation and discussion

Excellent (A+, A, A-)

High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
Final Exam

Criterion
To test students' application of material taught in class and evaluate their performance based on their performance on the exam

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

- Health Informatics
- Medical Informatics
- Clinical Informatics
- Biomedical Informatics
- Major Theories Supporting Health Care Informatics
- Database Models
- Database Types
- Data views and Data Manipulation
- System Development
- Healthcare Informatics Workflow
- Initial Search for Information
- Electronic Health Records (EMR)
- Computerized Provider Order Entry (CPOE)

- Decision Support Systems (DSS)
- Statistical Packages
- Ethics and Standards

Reading List

Compulsory Readings

	Title
1	Biomedical Informatics: Computer Applications in Health Care and Biomedicine (Health Informatics) 2012 (ISBN-13: 978-0387289861)
2	From Patient Data to Medical Knowledge: The Principles and Practice of Health Informatics - Paul Taylor
3	Shortliffe et al., BIOMEDICAL INFORMATICS, Computer Applications in Health Care and Biomedicine (Third Edition), Springer-Verlag, 2006.
4	O' Carroll et al, PUBLIC HEALTH INFORMATICS AND INFORMATION SYSTEMS, Health Informatics Series, Springer 2003.
5	Journal of the American Medical Informatics Association – JAMIA
6	Textbook references:http://www.healthinformaticsforum.com/page/health-informatics-books

Additional Readings

	Title
1	Nil