BMS3006B: TRANSFUSION SCIENCE AND TECHNOLOGY

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Transfusion Science and Technology

Subject Code
BMS - Biomedical Sciences
Course Number
3006B

Academic Unit
Biomedical Sciences (BMS)

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

Course Duration
One Semester

Credit Units
2

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

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
BMS3011 Hematology II (and BMS3011B Hematology II)
(Pre-requisites requirement are applicable for students admitted /changed to the Major with Catalogue Term from Semester A 2019/2020 and thereafter)

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Additional Information

Note: BMS3006B does not contain any practical component, and has a credit unit value of 2.

Part II Course Details

Abstract

The course will provide an extended understanding on the principles of the human blood groups, their classification, genetics, biochemical and serological characteristics as well as the principles of haemostatic mechanism. In laboratory training sessions, students will learn how to identify hemostatic disorders and perform coagulation test. Student will also have opportunity to gain practical experience in widely used techniques and strategies in blood transfusion practices and blooding blanking, including blood donor screening, component preparation and use, blood grouping, antibody screening, cross-matching for blood transfusion and tissue-typing, the skills accumulated during the training sessions will strengthen students' ability on performing laboratory testing and coagulation tests.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Understand the principle of blood coagulation		x		
2	Perform coagulation tests			x	
3	Identify the major types of the human blood groups and their characteristics		x		
4	Analyse clinical issues in transfusion sciences and apply it into relevant conditions		x		
5	Carry out the preparation work and storage of blood components			x	
6	Compare and contrast the various techniques used in blood transfusion practices			x	x
7	Communicate with medical laboratory scientists in different formats (e.g. verbally speaking/ report writing)			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, Tutorials and group discussions	Lectures and online teaching material (e.g. Online readings) will enable students to acquire knowledge regarding to the subjects in transfusion sciences	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Mid-term report	1, 2, 3, 4, 5	40	

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2-3

Additional Information for ATs

Minimum Passing Requirement: A minimum of 40% in both continuous assessment and examination.

Assessment Rubrics (AR)

Assessment Task

1. Mid-term report

Criterion

A reflection paper on the theoretical concepts that have been discussed in class or a case study taken from everyday life.

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

2. Final examination

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

- Blood bank laboratory
- Antibody detection and identification
- Blood group and the genetic basis of blood group
- Pre-transfusion testing procedures including computer crossmatch
- Hemolytic diseases and autoimmune hemolytic anemia.
- Red Blood cells
- White Blood cells
- Plasma
- Clotting factors
- Platelets
- Adverse effects of transfusion
- Risk and benefits of transfusions
- Aphaeresis in transfusion practice
- Transfusion transmitted diseases

Reading List

Compulsory Readings

	Title
1	Blaney, KD and Howard, PRBasic and Applied Concepts of Blood Banking and Transfusion Practices 3rd edition Publisher: Mosby Elsevier. ISBN: 978-0-323-08663-9
2	Transfusion Handbook (5th edition: January 2014) by JPAC http://www.transfusionguidelines.org.uk/transfusion-handbook Fully printable and identical to the printed book

Additional Readings

	Title
1	Nil