

BMS2008: HEMATOLOGY I

Effective Term

Semester A 2024/25

Part I Course Overview

Course Title

Hematology I

Subject Code

BMS - Biomedical Sciences

Course Number

2008

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 integrates advanced theory of hematology, including normal erythropoiesis, thrombosis and leucocyte, practical application, technical performance and evaluation of hematological and procedures. Students will learn how to

identify various types of blood cells and develop ability in hematological techniques conducted in hematology laboratories, including blood collection procedures, complete blood count, blood grouping, blood films, differential count, and staining methods for microscopy.

Course Intended Learning Outcomes (CILOs)

| CILOs | Weighting (if app.) | DEC-A1 | DEC-A2 | DEC-A3 |
|-------|---|--------|--------|--------|
| 1 | Demonstrate a working knowledge of the theories and techniques utilized in standard laboratory procedures performed in Hematology | x | | |
| 2 | Differentiate various hematological procedures and the use of basic equipment required to working in Clinical Hematology Laboratory | | x | |
| 3 | Evaluate test results with normal abnormal physiologic circumstances | | x | |
| 4 | Identify the various components of blood, their functions, and roles in normal states | | x | |
| 5 | Develop the ability to communicate with medical laboratory specialists | | 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.

Learning and Teaching Activities (LTAs)

| LTAs | Brief Description | CILO No. | Hours/week (if applicable) |
|------|------------------------|---|----------------------------|
| 1 | Lectures and tutorials | 1, 2, 3, 4, 5 | |
| 2 | Laboratory sessions | Laboratory sessions will allow the students to develop practical skills | 1, 2, 3, 4, 5 |

Assessment Tasks / Activities (ATs)

| ATs | CILO No. | Weighting (%) | Remarks (e.g. Parameter for GenAI use) |
|-----|---------------------------------|---------------|--|
| 1 | Laboratory Exercises and others | 1, 2, 3, 4, 5 | 40 |

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

2-3

Additional Information for ATs

Practical Examination: 30%

Written Examination: 30%

Examination total: 60%

Minimum Passing Requirement:

- Continuous assessment: 40%; and

- Written examination: 40%; and

- Practical examination: 40%.

Please note that attendance in all practical sessions is mandatory for the completion of the course. Practical sessions are an integral part of the curriculum, providing hands-on learning experiences and essential for medical laboratory science training. Failure to attend practical sessions (an unauthorized absence and/or lateness) may result in a deduction of marks or, in extreme cases, may lead to failure in the course.

Assessment Rubrics (AR)

Assessment Task

1. Practical laboratory performance

Criterion

Demonstrate the ability to apply what has been taught in lectures/tutorials into practice

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

- Hematopoiesis
(Origin of erythrocytes, leukocytes and platelets Cell maturation processes)
- Routine Hematology Testing
(CBC parameters (WBC, RBC, HGB, HCT, RBC Indices, PLT)
- Erythrocytes
- Leukocytes
- Platelets
- Special Hematology Testing
- Molecular diagnosis methods and practical skills

Reading List

Compulsory Readings

| | Title |
|---|--|
| 1 | McKenzie, Shirlyn B., Clinical Laboratory Hematology, Second Edition, Pearson Education, ISBN 0-13-513732-2 |
| 2 | Rodak, B.F., Fritsma, G.A. & Keohane, E. (2011) Hematology: Clinical principles and applications (4th ed.), Elsevier Saunders. |
| 3 | Rodak, B.F. & Carr, J.H. (2012) Clinical Hematology Atlas (4th ed.), Elsevier Saunders. |
| 4 | Sir John V. Dace & SM Lewwis, Practical Hematology, ISBN: 0 443019819 |
| 5 | Bunn, F.H. (2011) Pathophysiology of blood disorders, McGraw-Hill Medical. [e-book] |
| 6 | Rozenberg, G. (2011) Microscopic haematology (3rd ed.), Elsevier Saunders. Smith, G. (2010) Problem solving in haematology, Oxford Clinical Publishing. [e-book] |

Additional Readings

| | Title |
|---|---------------------------------|
| 1 | American Journal of Haematology |