MASINDE MULIRO UNIVERSITY
DEPARTMENT OF MEDICAL LABORATORY SCIENCES

BMH 824: IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION (4 CREDIT HOURS)
Lecturer: Mr. Paul M. Kosiyo

Course objective: The purpose of the course is to enable the learner to advance their knowledge in medical immunohaematology and blood transfusion and related investigative laboratory technology clinical plus forensic applications of these. It builds on the student's study of the subject during undergraduate degree study
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Learning Outcomes:

1. Discuss the genetic basis of blood group and related antigens
2. Discuss the molecular, biochemical and immunochemical basis of immunohaematology
3. Explain the role blood group antigens and corresponding antibodies in immunohaematology
4. Discuss the clinical and forensic applications of immunohaematology
5. Prepare reagents and materials used in immunohaematological laboratory work
6. Discuss the principles, procedures, biosafety-biosecurity and quality assurance systems in immunohaematology
7. Discuss the forensic and oncological applications of immunohaematology and blood transfusion technology
8. Apply relevant knowledge and understanding to prepare materials and perform immunohaematological laboratory investigations
9. Discuss current advances and emergent advances and issues in immunohaematology and related technology

CONTENTS AND OUTLINE:

Week 1: Red cell antigens and blood group antibodies. ABO and Rhesus blood grouping; compatibility (cross-matching) testing and pre-transfusion tests;

Week 2 Enzymes and reagents used in blood transfusion

Week 3allogeneic blood transfusion hazards; ABO, Rh and other immunohaemolytic diseases; Complications of blood transfusion.

Week 4: CAT I

Week 5: Ante-natal and Neonatal exchange transfusion;.

Week 6: Transplantation immunohaematology: Types of transplants, transfusion support in transplantation, stem cell transplantation, bone marrow, renal and liver transplantation, tissue banking;

Week 7 Histocompatibility serology; Blood substitutes and haemopoietic agents. Modern molecular laboratory techniques in transfusion medicine;

Week 8: CAT II

Lecture 9: Introduction to Oncological immunohaematology: Immunopathology and haematopathology**;** Tumor markers and immune-serological assay;

Lecture 10: Introduction to Forensicimmunohaematological and serological laboratory technology

Lecture 11: Trace evidence analysis and immunohaematology—Principles and technologies;

Lecture 12: Current immunohaematological advances, emergent technologies and issues in forensic laboratory medicine, science and practice

REFERENCES.

REFERENCES

1. McKenzie, S.B. (2004). Clinical Laboratory Hematology. Prentic-Hall, Inc. ISBN 10: 0130199966, ISBN 13: 9780130199966.
2. Bernadette F. Rodak, George A. Fritsma, Elaine Keohane. (2011). Hematology: Clinical Principles and Applications, 4th Edition. Saunders
3. Web-based resources

Teaching-Learning Strategies

Lecture, Group work and presentations, E-learning, Reading assignments and Seminars, Self-directed learning, Field visits

ASSESSMENT:

Continuous assessment tests	40%
End of Semester Examination	60%
Total	**100%**

Cc: The HOD, Department of Medical Laboratory Sciences