

Montgomery County Community College
MLT 125
Hematology Lecture
2-2-0

COURSE DESCRIPTION:

Comprehensive course in the fundamentals of theory and practice in clinical hematology and hemostasis, including hematopoiesis of red and white cells, cell function, correlation of test results with pathophysiology, and the principles of routine analyses and instrumentation.

REQUISITES:*Previous Course Requirements*

- MLT 110 Introduction for the Medical Laboratory Technician with a minimum grade of “C”
- BIO 130 Introductory Anatomy and Physiology with a minimum grade of “C”
- CHE 131 Chemistry for Technology I with a minimum grade of “C”

Concurrent Course Requirements

None

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
1. Use medical terminology appropriately as it pertains to hematology.	Lecture/Discussion Assigned Readings	Written Examinations
2. Discuss routine hematology procedures and their principles.	Lecture/Discussion Assigned Readings	Written Examinations
3. Evaluate validity of test results by detecting errors and their sources.	Lecture/Discussion Assigned Readings	Written Examinations
4. Determine acceptability of control values.	Lecture/Discussion Assigned Readings	Written Examinations
5. Describe common hematology instruments/equipment, their principles of operation and applications, and troubleshooting techniques to detect instrument malfunctions.	Lecture/Discussion Assigned Readings	Written Examinations

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
6. List routine instrument maintenance procedures.	Lecture/Discussion Assigned Readings	Written Examinations
7. Discuss the relationship between test data obtained and other pertinent information.	Lecture/Discussion Assigned Readings Case Studies/ Oral Presentation Written Assignment	Written Examinations Presentation/Outline Evaluation Rubric
8. Describe the pathology of common hematological diseases.	Lecture/Discussion Assigned Readings Case Studies/Oral Presentations Software Tutorial Written Assignment	Written Examinations Presentation/Outline Evaluation Rubric
9. Correlate physiological conditions to abnormal results.	Lecture/Discussion Assigned Readings Case Studies/Oral Presentations Software Tutorial Written Assignment	Written Examinations Presentation/Outline Evaluation Rubric
10. Identify reference values and results for hematology tests using appropriate units.	Lecture/Discussion Assigned Readings	Written Examinations

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:

1. Platelet Function in Coagulation
2. Coagulation Factors and the Cascade
3. Coagulation Disorders
4. Instrumentation and Diagnostic Tests, Erythropoiesis
5. Erythrocyte Morphology, Interactive Computer Exercise
6. Megaloblastic and Hypochromic, Microcytic Anemias
7. Hemolytic Anemia
8. Normocytic Anemia
9. Leukopoiesis
10. Inherited Anomalies and Qualitative Disorders, Quality Control
11. Lymphoproliferative and Myeloproliferative Disorders

LEARNING MATERIALS:

Textbooks and Required Materials:

Carr and Rodak. (2016). *Clinical Hematology Atlas* (5th ed.). Elsevier.

Estridge and Reynolds. (2012). *Basic Medical Laboratory Techniques* (6th ed.).
Thomson Delmar Learning.

Turgeon, M (2018). *Clinical Hematology* (6th ed.). Lippincott.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Reapproved by: Bradley Gottfried Date: 12/3/1998

Prepared by: John C. Flynn, Jr. Date: 8/1998

Revised by: Debra Lynn Eckman, M.S., MT (ASCP) Date: 1/2009

VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr. Date: 9/11/2009

Revised by: Debra Lynn Eckman, M.S., MT (ASCP) Date: 10/2012

VPAA/Provost or designee Compliance Verification:
Victoria L. Bastecki-Perez, Ed.D. Date: 11/5/2012

Revised by: Debra Lynn Eckman, M.S., MT (ASCP) Date: 9/2014

VPAA/Provost or designee Compliance Verification:
Victoria L. Bastecki-Perez, Ed.D. Date: 9/25/2014

Revised by: Debra Lynn Eckman, M.S., MT (ASCP) Date: 10/13/2017

VPAA/Provost or designee Compliance Verification: Date: 11/13/2017



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.