

MLS 4808 - Advanced Hematology

Fall 2026 Syllabus, Section 01, CRN 42740,

Credit hours: 4

Instructor

Farhana Mueez

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Public Instructor Information

Instructor Title:

Farhana Mueez M.D., M.H.A., MLS (ASCP)cm

Program Director Medical Laboratory Science Programs

Instructor Professional Qualifications:

M.D., ECFMG Certified-2011

M.H.A., University of Phoenix-2006

MLS (ASCP)cm: University of Kentucky-2017

Instructor Office Location:

Dept. of Health Professions

Cushwa Hall Room # 2450

Instructor Office Phone:

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Course Description

4808. Advanced Hematology. Advanced study of human blood and laboratory analysis and correlation to hematological and hematopoietic disorders. Web based lecture. Prereq.: Acceptance into the MLS Advanced Placement Online Completion Program. 4 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Clinical Hematology Atlas	Jacqueline H.Carr	978-0-323-71192-0
Required	Hematology in Practice 4th Edition	Betty Ciesla	978-1-7196-5114-1
Required	Rodak's Hematology Clinical Principles and Applications	Elaine M. Keohane,Michelle M.Butina, Kamran M. Mirza, Jeanine M.Walenga	978-0-323-93650-7
Optional	Quick Review Cards for Medical Laboratory Science	Valerie Dietz Polansky	978-0803629561
Optional	BOC Study Guide, 7th Edition: MLS-MLT Clinical Laboratory Examinations	ASCP EDITORIAL BOARD	9780891896845

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

TENTATIVE AGENDA F2026 (This Schedule is subjected to change according to the class requirement)

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
10/19	Chapter # 1 Pg- 3 Ciesla Chapter # 5 pg-59 Rodak's Chapter # 12 pg- 178 Rodak's Chapter # 6,7 pg- 78-95 Chapter # 8 pg- 109	Lecture # 1 Introduction to Hematology & Basic Laboratory Practices Lecture# 2 Hematopoiesis Lecture# 3 Lab evaluation, Testing and Interpretation Lecture # 4 Red Cell Production, Function & RBC Morphology Lecture # 5 Erythrocytes Morphology & Inclusions Lecture # 6 Hemoglobin Structure & Function Quiz # 1 (lectures # 1-6) Assignment # 1 Case Studies Discussion Question # 1	Quiz# 1 open from 10/19 till 10/25 Assignment # 1 due 10/28 Discussion Question # 1 open 10/19 till 10/25
10/26	Chapter # 16 pg- 262 Rodak's Chapter # 5 pg-69 Ciesla , Chapter 17, pg- 275 Rodak's Chapter # 6 pg- 89 Ciesla, Chapter # 18 pg- 296 Rodak's Chapter # 7 pg-101 Ciesla, Chapter 20-23 pg-330 Rodak's	Lecture #7 Introduction to Anemias & Blood Loss Lecture # 8 Microcytic Anemias Lecture # 9 Macrocytic Anemias Lecture # 10 Normocytic Anemias- Biochemical, Membrane & Misc. Erythrocytes Disorders (Part -1) Lecture # 11 Normocytic Anemias- Biochemical, Membrane & Misc. Erythrocytes Disorders (Part -2) Quiz# 2 (lectures # 7-11) Assignment # 2 Media Lab Discussion Question # 2	Quiz# 2 Open from 10/26 till 11/01 Assignment # 2 Media Lab due 11/04 Discussion Question # 2 open 10/26 till 11/01
11/2	Chapter # 8 pg- 119 Ciesla, Chapter # 24 pg-408 Rodak's Chapter # 25 pg- 440 Rodak's Chapter # 9 pg- 138 Ciesla Chapter # 10 pg- 151 Ciesla Chapter # 27 pg- 489 Rodak's Chapter # 15 pg- 224 Rodak's	Lecture# 12 Hemoglobinopathies Lecture # 13 Thalassemias Lecture # 14 Leukopoiesis & Leukopoiesis Function Lecture # 15 WBC abnormalities and anomalies Lecture # 16 WBC Laboratory Evaluation Lecture # 17 Introduction Leukocytes Neoplasms Lecture # 18 Bone Marrow Testing Quiz# 3 (lectures # 12-18) Assignment # 3 Media Lab Discussion Question # 3	Quiz# 3 open from 11/02 till 11/08 Assignment Media Lab # 3 due 11/11 Discussion Question # 3 open from 11/02 till 11/08
11/9	Midterm Exam Comprehensive	Midterm Exam Comprehensive (lectures # 1- 18)	Midterm Exam open from 11/09 till 11/15
11/16	Chapter # 31 pg- 566 Rodak's Chapter # 32 pg- 583-Rodak's Chapter # 13 pg-219 Ciesla Chapter # 33 pg- 618 Rodak's	Lecture # 19 Acute Leukemias Lecture # 20 Chronic Leukemias Lecture # 21 Myeloproliferative Disorders Lecture # 22 Lymphoproliferative Disorders & Related Plasma cell disorders Lecture # 23 Myelodysplastic Disorders Quiz # 4 (lectures # 19-23) Assignment # 4 Case Studies Discussion Question # 4	Quiz# 4 open from 11/16 till 11/25 Assignment # 4 Case Studies due 11/30 Discussion Question # 4 open from 11/16 till 11/22



11/23	Chapter# 11 pg- 159 Rodak's Chapter # 15 pg-243 Ciesla Chapter 37 & 38 pg- 713 Rodak's Chapter # 17 pg- 273 Ciesla	Lecture # 24 Megakaryopoiesis & Platelet physiology Lecture # 25 Overview of Hemostasis Lecture # 26 Quantitative and Qualitative Disorders of Platelets Lecture # 27 Defect of Plasma Clotting Factors Quiz # 5 (lectures # 24-27) Assignment # 5 Media Lab Discussion Question # 5	Quiz# 5 open from 11/22 till 11/30 Assignment # 5 Medial Lab due 12/02 Discussion Question # 5 open 11/22- till 11/29
11/30	Chapter # 18 pg- 285 Ciesla Chapter # 19 pg- 297 Ciesla Chapter # 20 pg- 315 Ciesla Chapter # 43 pg- 862 Rodak's	Lecture# 28 Fibrinogen, Thrombin & Fibrinolytic System Lecture # 29 Anticoagulation Therapy Lecture # 30 Hematology and Coagulation Instrumentation Lecture # 31 Hematology and Hemostasis in Pediatric, Geriatric and Pregnant Populations	

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