

**UNIVERSITY OF THE PHILIPPINES
COLLEGE OF MEDICINE**

**OS 216: Human Disease and Treatment - Hematopoiesis and the Immune Response
AY 2022-2023**

COURSE GUIDE

COURSE DESCRIPTION

This is a 2-week course (1 week for Allergology/Immunology Module and 1 week for Hematology Module) that covers the pathophysiology, symptomatology, diagnosis, prevention and principles of treatment of diseases of the Hematopoietic and Immune Systems.

This course guide will focus on the Hematology Module. A separate course guide for the Allergology/Immunology Module will be made available.

MODULE LEARNING OUTCOMES

At the end of this module, the student should be able to:

1. Define different benign and malignant hematologic disorders and identify their causes and risk factors.
2. Differentiate pediatric and adult hematologic disorders in terms of epidemiology and clinical presentations.
3. Correlate the pathophysiology and manifestations of different benign and malignant hematologic disorders.
4. Discuss appropriate diagnostic work-up and management principles for benign and malignant hematologic disorders.
5. Discuss the psychosocio-economic impact of hematologic disorders on the patients and their families.
6. Discuss the principles of blood donation and blood component therapy.
7. Define the indications for blood component and whole blood transfusion.
8. Discuss transfusion related complications and their management.
9. Identify ethical issues on blood transfusion.

COURSE OUTLINE

- A. Benign Hematology
 - a. Anemia
 - i. Thalassemias
 - ii. Nutritional causes of anemia
 1. iron deficiency anemia
 2. megaloblastic anemia
 - iii. Hemolytic anemia
 - iv. Anemia of chronic disease
 - v. Anemia of malignancies
 - b. Bleeding Disorders
 - i. Congenital Bleeding Disorders
 1. hemophilia A, B, C
 2. platelet disorders

- ii. Acquired Bleeding Disorders
 1. thrombocytopenic purpura
 2. Coagulopathies including Disseminated Intravascular Coagulation (DIC)
 3. platelet disorders
 - c. Hypercoagulable States
 - i. protein C, S deficiencies
 - ii. antiphospholipid antibody syndrome
 - iii. arterial and venous thrombosis
 - d. Bone Marrow Failure
 - i. Aplastic Anemia
 - ii. Congenital and acquired pure red cell aplasia
 - B. Malignant Hematology
 - a. Acute myeloid leukemias
 - b. Acute lymphoblastic leukemia / lymphoma
 - c. Chronic myeloproliferative and lymphoproliferative disorders
 - d. Plasma cell dyscrasias / gammopathies
 - e. Myelodysplastic Syndromes
 - C. Transfusion Medicine
 - a. Blood groups
 - b. Blood component transfusion
 - c. Cross-matching procedures
 - d. Blood transfusion incompatibility
 - e. Indications for blood component/ whole blood transfusion
 - f. Autologous blood transfusion
 - g. Blood transfusion reactions
 - i. immune mediated
 - ii. non-immune mediated
 - h. Transfusion related / transmitted diseases
 - i. Ethical issues in blood transfusion
 - j. Voluntary blood donation/advocacy
 - D. Approach to Hematologic Complaints

MODE OF DELIVERY

The module will be a hybrid format with lectures delivered remotely and a with majority being self-directed. Students are however required to see patients for SGD in person.

For access to module materials, all students will be enrolled to the UPM VLE (<https://vle.upm.edu.ph/>) for the module (OS 216 Human Disease and Treatment (HDT6) Hematopoiesis). Discussion Boards will be made available for lectures.

All submissions and non-urgent queries may also be directed to tedumagay@up.edu.ph.

MODULE SCHEDULE

TIME	Oct 24 Monday	Oct 25 Tuesday	Oct 26 Wednesday	Oct 27 Thursday	Oct 28 Friday
8:00-9:00 AM	Orientation	Approach to Anemia in Adults	Pediatric Hematologic Malignancies	Small Group Discussion/Simulated Patient Activity/Self Study	Written Examination in Hematology
9:00-10:00 AM	Introduction to Hematology	Approach to Anemia in Pediatrics			
10:00-11:00 AM	Common laboratory tests used in hematology	Bleeding Disorders in Adults	Adult Hematologic Malignancies		
11:00AM-12:00NN	Simulated Patient Activity/Group Work/Self Study	Bleeding Disorders in Pediatrics			
12:00-1:00PM	LUNCH BREAK				
1:00-3:00PM	Blood Bank Plenary	Hypercoagulable States	Approach to Hematologic Complaints	Small Group Discussion Simulated Patient Activity/Self Study	Simulated Patient Activity/ Small Group Discussion
3:00-5:00PM	Pathology/Morphology Plenary	Bone Marrow Failure States	Simulated Patient Activity/Group Work/Self Study		

Highlighted are the activities that may require face to face. SGD will either be face to face or via zoom depending on availability of consultant. Per group there will only be 1 SGD. SGD is based on actual patient that will be assigned to you and whose names and location will be released to you the week of the rotation.

MODULE REFERENCE MATERIALS

- Longo et al. eds. *Harrison's Principles of Internal Medicine, 20th ed.*
- Kliegman et al. eds. *Nelson Textbook Of Pediatrics, 21st ed.*
- Kumar et al. eds. *Robbins and Cotran Pathologic Basis of Disease. 9th ed.*
- Clinical Practice Guidelines (PGH Blood bank, AABB, WHO, ELN, NCCN, ASCO, EHA etc.)

COURSE REQUIREMENTS

1. COMPUTATION OF HEMATOLOGY MODULE GRADE

a. The breakdown of the Hematology Module grade is as follows:

Written Examination	=	40%
Group Written Case Discussion	=	20%
Small Group Discussion	=	20%
Simulated Patient	=	20%

Total	=	100%

b. If a student is unable to attend the small group discussion, a written case discussion based on a paper case will take the place of the synchronous grade. This written case discussion is different from the Group Written Case Discussion.

c. A student will be considered to have passed the Hematology module if they have a passing grade for each of the individual evaluation components and a passing final grade

2. COMPUTATION OF FINAL GRADE FOR THE HEMATOPOIESIS AND THE IMMUNE RESPONSE COURSE OS 216

a. The computation of the pre-final grade in OS 216 is as follows:

- 50% from the Hematology module grade (raw score)
- + 50% from the Allergy/Immunology module grade (raw score)

b. Students with pre-final passing grades in both Hematology and Allergy/Immunology modules are exempted from the Integrated Hematology-Allergy/Immunology final examination.

c. Students who pass only one of the two modules or who fail both modules must take the Integrated final Hematology- Allergy/Immunology examination.

d. Students with passing pre-final grades in each of the modules who wish to improve their course grade may take the Integrated Hematology- Allergy/Immunology final examination. These students who opt to take the Integrated Final Examination automatically waive the computation of their course grade based on letter **a**. The computation of the course grade in OSI 216 of these students will be based on letter **e**.

e. Computation of the course grade in the entire course for students who take the Integrated Hematology – Allergy/Immunology final examination is as follows:

$$\begin{array}{r}
 \left(\begin{array}{l} 50\% \text{ Hematology Module Grade} + 50\% \text{ Allergy/Immunology Module Grade} \\ \text{Raw Score} \qquad \qquad \qquad \text{Raw Score} \end{array} \right) \times 80\% \\
 \text{Plus} \left(\text{Integrated Final Examination Grade} \right) \qquad \qquad \qquad \times 20\% \\
 \hline
 \text{TOTAL} \qquad \qquad \qquad = \qquad 100\%
 \end{array}$$

f. The student’s final raw score grade will be computed as follows:

$$\begin{array}{r}
 \text{Course Final Grade} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \times 95\% \\
 \text{Plus} \\
 \text{Comprehensive Examination Grade} \qquad \qquad \qquad \qquad \qquad \qquad \qquad \times 5\% \\
 \hline
 \text{TOTAL} \qquad \qquad \qquad = \qquad 100\%
 \end{array}$$

g. In the event that the Comprehensive Examination is made formative instead of summative, the entirety of the students’ grades will be based on the Course Final Grade.

h. The final raw score grade in OS 216 is transmuted to the University approved grading system based on the Mean Passing Level decided for the course.

WRITTEN EXAMINATION

This will be given at the end of the module. The examination will consist of 100 multiple choice questions on the must know topics (see course outline).

SMALL GROUP DISCUSSION

This is a 1-hour synchronous activity. Students will be divided into groups of 9-10. Details of the patient assigned to each group will be made available to the students on the 1st day of rotation. Students are expected to actively participate in the discussion.

WRITTEN CASE DISCUSSION

Students are expected to submit group written reports on the case assigned to the class. The report should be at most 6-pages and should integrate points raised during the synchronous and asynchronous discussions.

SIMULATED PATIENT

This is an asynchronous interactive activity where students are asked questions in series about a case with each answer leading to specific patient outcomes. Feedback on decision

points will be made available.

FACULTY

This module involves faculty from the Department of Laboratories, Department of Medicine – Division of Hematology, Department of Pathology, and Department of Pediatrics – Section of Hematology and Oncology.

OS 216 Course Coordinator and Hematology Module Coordinator: Dr. Teresita Dumagay
(email: tedumagay@up.edu.ph)

HOUSE RULES

University and College Rules and Regulations on proper student decorum will be adopted for this course. Disciplinary actions for any violation of proper decorum will also be based on University and College guidelines.

For all course activities, students are expected to adhere to the University Honor Code as stated: “As a student of UPCM, I uphold honesty and truth. I will not lie, cheat, or steal someone else’s work. As a future doctor, the welfare of my patients will always come first.”

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