



## Course Syllabus

<b>Course Code</b>	<b>Course Title</b>	<b>ECTS Credits</b>
HEMA-541	Introduction to Hematology	7.5
<b>Prerequisites</b>	<b>Department</b>	<b>Semester</b>
None	Life Sciences	Fall
<b>Type of Course</b>	<b>Field</b>	<b>Language of Instruction</b>
Concertation - Hematology	Biomedical Sciences	English
<b>Level of Course</b>	<b>Lecturer(s)</b>	<b>Year of Study</b>
2 <sup>nd</sup> Cycle	Dr. Laura Kouma Dr Andria Theodorou Dr. Niki Vyrides	1 <sup>st</sup>
<b>Mode of Delivery</b>	<b>Work Placement</b>	<b>Co-requisites</b>
Face-to-face	N/A	None

### Course Objectives:

The main objectives of the course are to:

- The aim of the course is to provide an inside look into the processes involved in blood cell production and function.
- Discuss the main diagnostic procedures used in hematology in health and disease.

### Learning Outcomes:

After completion of the course students are expected to be able to:

1. Explain in detail the process of hematopoiesis, specifically erythropoiesis.
2. Describe red blood cell morphology and composition.
3. Define the classification of anemia based on red blood cell size and the etiology
4. Discuss the main diagnostic procedure in hematology
5. Describe the investigative approach and management of a patient with anemia.

### Course Content:

1. Hematopoiesis, morphology, and kinetics of red blood cells
2. Erythropoiesis and red cell morphology
3. Hemoglobin synthesis and degradation

4. Bone marrow failure and pure red cell aplasia
5. Define the pathogenesis of different types of anemia
6. Iron deficiency and other hypochromic anemias
7. Megaloblastic anemias and other Macrocytic anemias
8. Inherited and acquired hemolytic anemias
9. Genetic defects of hemoglobin, Haemoglobinopathies and Thalassemia
10. Hematological aspects of chronic disease
11. Acquire the theoretical and practical knowledge related to diagnostic procedures in hematology:
  - a) Complete blood count (CBC): WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, HDW, PLT, P-LCR, L-PLT, reticulocyte, CBC with differential; knowledge of hematological parameters
  - b) Determination of erythrocyte sedimentation rate
  - c) Preparation and staining of red blood cells for reticulocytes, H bodies, fetal Hb and G6PD
  - d) Cytochemical staining bone marrow smears, along with microscopical evaluation
12. Clinical cases and discussion.

**Learning Activities and Teaching Methods:**

Lectures, problem-based learning, poster and/or oral presentations of medical / research papers.

**Assessment Methods:**

Student performance in case studies, midterm, assignment and final.

**Required Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Clinical Hematology: Theory & Procedures	Mary Lou Turgeon	Wolters Kluwer	2018	ISBN-13: 978-1496332288 ISBN-10: 1496332288
Hoffbrand's Essential Hematology (7 <sup>th</sup> edition)	A. Victor Hoffbrand, Paul A. H. Moss	Wiley-Blackwell	2015	978-1-118-40867-4

**Recommended Textbooks / Readings:**

<b>Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Year</b>	<b>ISBN</b>
Transfusion medicine & hemostasis: clinical and laboratory aspects (2 <sup>nd</sup> Edition)	Beth H. Shaz, Christopher D. Hillyer, Mikhail Roshal, Charles S. Abrams	Elsevier Science	2013	978-0123971647