

Course: Hematology

credits: 5

Course code	BOVH22RHEMAT
Name	Hematology
Study year	2023-2024
ECTS credits	5
Language	English
Coordinator	A.L. Drayer

Modes of delivery	Lecture
Assessments	Hematology - Computer, organised by STAD examinations

Learning outcomes

Learning aims: The student can

- Describe the stages of blood cell maturation from stem cell to maturity.
- Describe and explain the function of growth factors involved in hemopoiesis.
- Describe and explain the different laboratory values from blood examinations and show an understanding of the tests used.
- Discuss the nutritional and metabolic aspects of iron, vitamin B12 and folate.
- Explain the molecular and cellular defects in different forms of leukemia.
- Explain the molecular and cellular defects in different forms of anemia and genetic disorders of hemoglobin.
- Explain the molecular and cellular defects in thrombosis and bleeding & coagulation disorders.
- Explain the rationale of treatment protocols (including chemotherapy, targeted therapies, stem cell transplantation, blood transfusion, anticoagulants, anti-platelet and fibrinolytic drugs) for the diseases discussed.
- Discuss a scientific article and transfer knowledge to fellow students.

Content

Level: advanced (3)

Content:

Course Title: Hematology (minor Medical Biology)

Course Code: BOVH22RHEMAT

Credits: 5EC

Course description: In this Hematology course we will discuss the formation of blood cells (hemopoiesis) and their roles in health and disease. The focus in Hematology, part I, will be on myeloid cells and leukemia. The focus in Hematology, part II, will be on the formation of erythrocytes & platelets and diseases due to anemia and defects in blood clotting. Lectures on all topics will be provided as well as practice problems. In addition, students will prepare and give a presentation to the class on selected scientific articles on hematology. For this, students will form small groups, each group giving a presentation on one article.

Study Materials: Textbook and selected scientific articles (links to articles will be provided in Blackboard).

Textbook: Hoffbrand's Essential Haematology, Wiley, 8th edition.
Chapters for Hematology, part I

- 1: Haemopoiesis
- 8: The white cells, part 1
- 11: The aetiology and genetics of haematological neoplasia
- 12: Management of haematological malignancy
- 13: Acute myeloid leukaemia
- 14: Chronic myeloid leukaemia
- 17: Acute lymphoblastic leukaemia
- 30: Blood Transfusion

Chapters for Hematology, part II

- 2: Erythropoiesis and general aspects of anaemia
- 3: Hypochromic anaemias
- 5: Megaloblastic anaemias and other macrocytic anaemias
- 6: Haemolytic anaemias
- 7: Genetic disorders of haemoglobin
- 24: Platelets, blood coagulation and haemostasis
- 25: Bleeding disorders caused by vascular and platelet abnormalities
- 26: Coagulation disorders
- 27: Thrombosis 1: pathogenesis and diagnosis
- 28: Thrombosis 2: treatment.

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Assessment Methods: The Assessment consists of 3 parts. Points of each part will be added together to form a Final Grade of 1 to 10.

1. Part 1: Each student takes part in preparing and giving a Presentation on a selected article in the field of hematology. Grading will be Pass or Fail based on the quality of the presentation as assessed by the lecturer. A "Pass" will result in 1,0 point awarded towards the Final Grade.
2. Part 2: Mid-term closed question and short answer Test on the topics in Hematology, part I. A score of 70% or more will result in 2,0 points awarded towards the Final Grade. Students who are not able to take the mid-term test or fail the test (score below 70%) will not be awarded any points, but will take additional questions during the final exam. Note: the 70% score to obtain the full 2,0 points does not count in the final exam, but the points will be awarded according to the percentage scored. So for example, a 80% score will result in 1,6 points towards the final grade, and a 50 % score in 1,0 points.
3. Part 3: Final exam consisting of closed questions, shorts answers and essay questions covering topics of Hematology part I and II. A maximum of 6,0 points will be awarded. Students who have missed or failed the mid-term quiz will take additional questions on part I in the final exam so a maximum of 8,0 points can be awarded.
4. The Final Grade is calculated by adding the points awarded in the presentation, the mid-term quiz and the final exam together plus 1 point, resulting in a final grade of 1 (minimum) to 10 (maximum) points. To pass at least 5,5 points have to be awarded.

Included in programme(s)

Minor Medical Biology

School(s)

Institute for Life Science & Technology

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