Department of Biology

College of Science

Salahaddin University

Subject: ……Clinical Haematology II

Course Book – (3th Year)

Lecturer's name (Assist. Prof. Sarbaz I. Mohammed, PhD)

Academic Year: 2021/2022

Course Book

1. Course name	**Clinical Haematology**
2. Lecturer in charge	**Dr. Sarbaz I. Mohammad**
3. Department/ College	**Biology/ Science**
4. Contact	**e-mail: Sarbaz.mohammed@su.edu.krd.** **Tel: (+9647504545386)**
5. Time (in hours) per week	**For example Theory: 2/week** **Practical: 6/week**
6. Office hours	**To be Return to the schedule on the office door**
7. Course code	
8. Teacher's academic profile	**1- Assistan prof. Dr. Sarbaz I. Mohammad** • I graduate from Salahaddin University in 1987(Ranked 4th in department). In 1997 I finished my MSc degree and start as Assistant Lecturer Teaching Practical animal physiology, Practical hematology, Practical parasitology, practical cell biology and Practical Invertebrate Biology. • For 8 years I worked as a Member of the Examination Committee for College of Science. In 2007 I get my PhD degree in hematology and from that time, as a Lecturer, I am in charge in teaching comparative theory for 4th class students, Supervising MSc and diploma student, Teaching Advanced hematology and endocrinology for Graduate student. I am head of Kurdistan natural history museum from 2008
9. Keywords	**Haematology, blood banking**

10. Course overview:

In this section the lecturer shall write an overview about the subject he/she is giving. The course overview must cover:

- The importance of studying the subject
- Understanding of the fundamental concepts of the course
- Principles and theories of the course
- A sound knowledge of the major areas of the subject
- Sufficient knowledge and understanding to secure employment

11. Course objective:

- **Clinical haematology is dedicated to the diagnosis and treatment of diseases of blood and blood forming tissues. The diseases in the area of Hematology may involve: Blood cells (red blood cells, white blood cells and platelets); other blood components; The hematopoietic organs (bone marrow, lymph nodes, spleen).**
- **The goal of the clinical hematology is to facilitate mastery of the principles and practice of hematology needed by medical laboratory technician and medical laboratory science students to achieve board certification or licensure upon graduation. Clinical hematology has been classroom and laboratory (field tested) medical laboratory technician and medical laboratory technology**

12. Student's obligation

Classroom polices:

1- Attendance: You are strongly encouraged to attend class on a regular basis, as participation is important to your understanding of the material. This is your opportunity to ask questions. **You are responsible for obtaining any information you miss due to absence**

2- **Lateness:** Lateness to class is disruptive

3-**Talking:** During class please refrain from side conversations. These can be disruptive to your fellow students and your professor

13. Forms of teaching

Course Book, white board and PowerPoint

14. Assessment scheme

Breakdown of overall assessment and examination

Component	Date	Percent
Examination		10 %
Attendance & Quiz		5 %
Total		15%

15. Student learning outcome:

After completion of this course, you will be able to:

- Define common terms used in clinical hematology & blood banking.
- Identify all the possible methods for preparation of blood analysis
- Different structure blood
- Identify basic classification of anemia
- Steps of blood banking

16. Course Reading List and References:

1. Turgeon M. L. (2018). Clinical Hematology Theory and Procedures. 6th edition. Philadelphia: Wolters Kluwer
2. Provan D., Trevor B., Inderjeet D., Johannes de vos. (2015) Oxford Handbook of Clinical Haematology. 4th edition. USA by Oxford University press.
3. Denise Harmening (2012). Modern Blood Banking & Transfusion Practices. 6th edition. F. A. Davis Company Philadelphia, PA.

17. The Topics:	**Lecturer's name**
1- Course book	Week 1
2- Iron-Deficiency Anemia	Week 2
3- Thalassemia	Week 3
4- Sickle cell anemia	Week 4
5- Macrocytic Anemias	Week 5
6- Polycythaemia	Week 6
7- Introduction to Acute Leukemia	Week 7
8- Acute Lymphoblastic Leukemia	Week 8
9- Acute myloblastic Leukemia	Week 9
10- Chronic Lymphocytic Leukemia (CLL)	Week 10
11- Chronic myloblastic Leukemia (CML)	Week 11
12- Non-Hodgkin Lymphomas.	Week 12
13- Hodgkin Lymphoma	Week 13
14- Thrombocytopenia	Week 14
15- Platelet Dysfunction	Week 15
16- Blood Banking	Week 16
17- Examination 1	

18. Practical Topics (If there is any)	
In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture	Lecturer's name ex: (3-4 hrs) ex: 14/10/2021

19. Examinations:

Q1/ **Choose correct answer** **(marks)**

1- Which of the following Hb configurations is characteristic of Hb barts?
a. γ4 **b**. β4 **c**. α2-γ2 **d**. α2-β2
2- Hereditary anaemias include disorders of the ---------- of the RBC
a- Haemoglobin **b-** Membrane **c-** Enzymes **d-** All of them
3- The Hb Bart's hydrops fetalis syndrome in ----------
a- β-Thalassaemia b- α thalassaemia c- sickle cell anemia **d-** All of them
4- In children, the Mentzer index less than 13 indicate ----------
a- polycythaemia **b-** Thalassemia **b-** Iron deficiency **d-** sickle cell anemia
5- Heterozygotes for β thalassaemia are asymptomatic and have ----------
a- Low MCH **b-** Low MCV **c-** twice HbA2 **d-** All of them
6- Patients with sickle cell anaemia have a ----------
a- low Hb b- high reticulocyte count & polychromasia c- sickled RBC **d-** All of them
7- Serum ----------levels also may be very helpful in distinguishing between primary and secondary polycythemias. A- EPO b- Hb & Mcv c- plasma volume **d-** All of them
8- Patients with wild-type *JAK2* and a normal or elevated EPO level have ---------
A- Secondary polycythemia b- polycythemia vere c- Inheritance polycythemia **d-** All of them
9- Haemoglobin level in heterozygous β-Thalassaemia carrier between ----------
a- 7.0–9.0 g/dL b- 12–16.0 g/dL c- 9.0–11.0 g/dL d- below 7.0 g/dL
10- Peripheral blood smear from thalassemia intermedia patient, showing ---------
a- anisopoikilocytosis **b-** a nucleated red cell **c-** basophilic stippling **d-** All of them

Q2/ True or False **(marks)**

1- *Cabot Rings* are composed of proteins ring, primarily hemoglobin
2- Clinical features of anaemia are due to tissue hypoxia
3- Two α globin genes on each of their chromosomes 16
4- The sickle cell mutation results in a single amino acid substitution in the α globin chain
5- Apparent erythrocytosis results from reduce in plasma volume.

6- Infusions of desferrioxamine together with vitamin C to prevent iron overload
7- Clinical hematology is deal with the diagnosis and treatment of blood diseases
8- Morphologically classification of anaemias depends on MCH.
9- Anisopoikilocytosis are significant variation in shape of red cells
10- Serum haptoglobin level is another test to estimate the presence of increased hemolysis in the circulating blood

Q3/ (marks)

1- How are thalassemia's diagnosed?
2- Mention the Sickling syndromes **(**Types**)**
3- Mention investigations criteria for polycythaemia vera

20. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

21. Peer review **پێداچوونەوەی هاوەڵ**

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم کۆرسبووکە دەبێت لەلایەن هاوەڵێکی ئەکادیمیەوە سەیر بکرێت و ناوەڕۆکی بابەتەکانی کۆرسەکە پەسەند بکات و جەند ووشەیەک بنووسێت لەسەر شیاوی ناوەڕۆکی کۆرسەکە و واژووی لەسەر بکات.

هاوەڵ ئەو کەسەیە کە زانیاری هەبێت لەسەر کۆرسەکە و دەبیت پلەی زانستی لە مامۆستا کەمتر نەبێت.

Theory Lecturer's

Assist. Prof. Dr. Sarbaz I. Mohammed

Haematology