Ministry of Higher Education and Scientific

Department of ---Environmental Sciences and Health

College of ……Science……….

University of ………Salahaddin……….

Subject: Hematology (Practical),

Course Book – (Fourth stage)

Lecturer's name Dr. Jamal Kamal Muhhamed Amin

Academic Year: 2024/2025

Course Book

1. Course name	Hematology (Practical),
2. Lecturer in charge	Jamal Kamal Muhhamed Amin
3. Department/ College	Environmental Sciences and Health/Science
4. Contact	e-mail:Jamal.muhhamedamin@su.edu.krd Tel:009647504687552
5. Time (in hours) per week	Practical: 4 hrs
6. Office hours	2 hours in a week
7. Course code	
8. Teacher's academic profile	My name is Jamal Kamal Muhhamed Amin, and I am an environmental scientist with a strong academic and research background in air pollution, public health, and environmental science. I earned my PhD in 2025, specializing in **Air Pollution and Public Health**, where I investigated the relationship between air quality and human health outcomes. Prior to this, I completed an MSc in **Environmental Science**, focusing on **Environmental Pollution**, in 2014 from the Environmental Department at the College of Science, Salahaddin University. My academic foundation began with a Bachelor's degree in **Biology**, which I obtained in 2009 from Salahaddin University. Throughout my career, I have consistently pursued opportunities for professional development. I have participated in various training programs, including those focused on **English** and **Teaching Methods**, which have significantly contributed to my ability to effectively communicate and teach complex environmental topics. In 2018, I was honored with the title of **Lecturer**, reflecting my growing expertise and dedication to education. My research interests lie at the intersection of environmental science, pollution control, and public health. I have authored and co-authored several significant publications that have contributed to the understanding of pollution's impact on both the environment and human health. Below is a list of my published works: 1. **Environmental Impacts of Sand and Gravel Mining on Water Quality and Biodiversity in Kalak Sub-District** – This paper explores the

	environmental consequences of mining activities on water resources and biodiversity, focusing on the Kalak region. 2. **Additional Records of Freshwater Shrimp (Malacostraca: Crustacea) from Greater Zab River and Their Banks, Iraq** – This research expands knowledge of freshwater biodiversity in the Greater Zab River by documenting new findings of freshwater shrimp species in the area. 3. **The Elemental Composition of Atmospheric Particles and Dust Fall Rate in Erbil Governorate** – This study investigates the composition of atmospheric particles and the rate of dust fall in Erbil, examining how these factors contribute to air pollution in the region. 4. **Indoor Sulfur Dioxide Prediction through Air Quality Modeling and Assessment of Sulfur Dioxide and Nitrogen Dioxide Levels in Industrial and Non-Industrial Areas** – This paper assesses the levels of sulfur dioxide and nitrogen dioxide in various environments, providing important insights into the risks of indoor air pollution in both industrial and non-industrial settings. 5. **Investigating the Role of Some Biomarkers in Assessing the Proposed Air Pollution Effects in Selected Areas in Erbil Governorate** – This research focuses on using biomarkers to evaluate the potential effects of air pollution on human health, specifically in areas of Erbil Governorate impacted by industrial activities.
9. Keywords	

12. Student's obligation

Every student must have three examinations, the attendance, classroom activities, translations and the weekly quizzes also taken into account by 5 marks for all. As well as the final examination of the course will be on 15 marks. So that the final grade will be based upon the following criteria:

* Mean of three practical examinations: 12 %

* Daily quizzes: 3%

* Final practical examination: 15 %

13. Forms of teaching

Different forms of teaching will be used to reach the objectives of the course:

PowerPoint presentations for the head titles and definitions and summary of conclusions, classification of materials, and any other illustrations, the worksheet will be designed to let the chance for practicing several aspects of the course in the classroom, furthermore, students will be asked to prepare research papers on selective topics and summarize articles contents published in English into either Kurdish or Arabic language, those articles need to be from printed media or internet articles. There will be classroom discussions and the lecture will give enough background to translate, solve, analyze, and evaluate problems sets, and different issues discussed throughout the course.

To get the best of the course, it is suggested that you attend classes as much as possible, and read the required lectures, and teacher's notes regularly as all of them are foundations for the course. Lecture notes are for supporting and not for submitting the reading material including the handouts. Try as much as possible to participate in classroom discussions, preparing the assignments given in the course given in the course.

14. Assessment scheme

The overall marks are of two-part daily quizzes and monthly exams. The daily tests (quizzes) will be given 10 marks and finally calculated on 3% in addition to the monthly tests (2-3 tests), all these marks calculated as the yearly attempt mark 15% this is the yearly quest degree and the final exam will be done on 20%.

17. The Topics:	**Lecturer's name**
Course program	
1- Biosafety	***Week 1:***
2-Blood Drawing	***Week 2:***
3- Blood Drawing	

4- Clotting Time Test **5- Bleeding Time Test** **First Examination** **7- Erythrocyte-Sedimentation-Rate** **8- Blood Group** **9- Crossmatch** **10- WBC counting** **11- Differential Leukocyte Count** **12- Determination of Packed Cell Volume (PCV)** **13- RBC Count** **14- Seminar**	***Week 3:*** ***Week 4:*** ***Week 5:*** ***Week 6:*** ***Week 7:*** ***Week 8:*** ***Week 9:*** ***Week 10:*** ***Week 11:*** ***Week 12:*** ***Week 13*** ***Week 14***

18. Practical Topics (If there is any)	
19. Examinations:	
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 دەبێت پلەی زانستی لە مامۆستا کەمتر نەبێت.	

Name: Group:

Q1) Name A, B tubes and write the main difference between them.

Q2) Name the anticoagulants for these tubes and write one use for each tube.

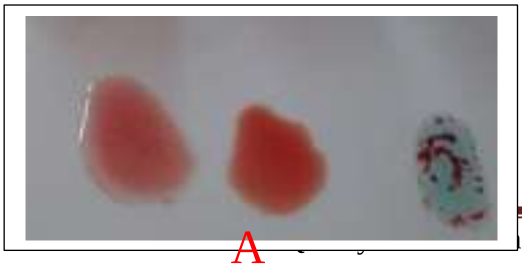
Q3) Write the main difference between tubes 2, 4 and write one reason for this problem.

Q4) define hematology and bleeding time.

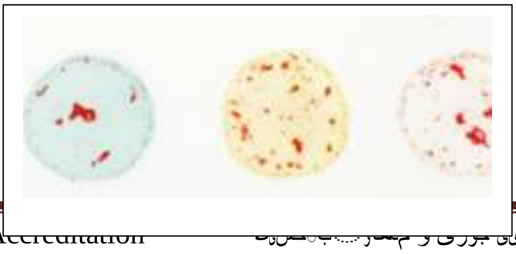
Q5) Name it and why we used for clotting time test?

Q6 What is an ESR test and write the main difference between ESR and CRP TEST?

Q7) Determine the type of blood group and their Rh factor.



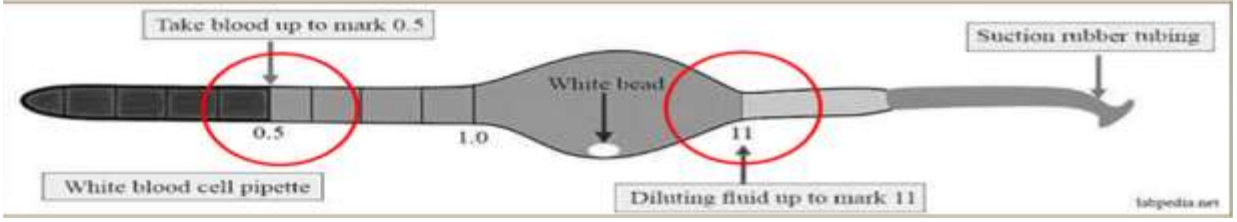
A



B

Q8) Name the test and why we do this test?

Q9) Name this test and why we used Turk's solution?



Q10) Why we used the following?

1-Tourniquet

2- Lancet

Supervisor

Assis. Prof. Sarbaz I. Mohammed

Jamal kamal Mohammedamin

Lecturer