



## **Course Handbook**

Ministry of Higher Education and Scientific research

Salahaddin University- Erbil

College of Education/ Shaqlawa

Biology Department

Fourth Stage: First Semester (Optional (Elective)

**Subject: Blood Bank**

Academic Year: 2023-2024

Lecturer names:

**Lec. Sherko Muhammed Abdul-Rahman**

## Course Book

<b>1. Course name</b>	Blood Bank, <b>Optional (Elective)</b>
<b>2. Lecturer in charge</b>	Lec. Sherko Muhammed Abdul-Rahman
<b>3. Department/ College</b>	Biology Dept./ College of Education/Shaqalawa
<b>4. Contact</b>	E-mail: sherko.abdulrahman@su.edu.krd, Mob.: 00964 750 445 6357 00964770 445 6357
<b>5. Time (in hours) per week Optional (Elective)</b>	Weekly hours (Theory): (2) hrs.
<b>6. Office hours</b>	2 hours per week
<b>7. Course code</b>	EdB1406
<b>8. Teacher's academic profile</b>	<p><b>Education:</b></p> <ul style="list-style-type: none"> <li>• Graduated from Nursing Preparatory School-Erbil in 1991-1994.</li> <li>• Obtained Diploma from Nursing Dept., Medical Technical Institute-Erbil in 1994-1996</li> <li>• Obtained B.Sc. in Biology/Microbiology from college Science/ Salahaddin University-Erbil in 1996-2001.</li> <li>• Obtained Master in Management Business Administration (MBA)/Business Management University (BMU)/ Lebanon-French University in 2007-2010.</li> <li>• Obtained M.Sc. in Biology/ Microbiology from College Education/ Salahaddin University-Erbil in 2017-2019.</li> </ul> <p><b>Thesis Title:</b></p> <ul style="list-style-type: none"> <li>• Neonatal Sepsis: Bacteriological Profile, Molecular Detection and Antimicrobial Susceptibility Test Among Preterm Pediatric in Erbil City.</li> </ul> <p><b>Experiences &amp; Qualifications:</b></p> <ul style="list-style-type: none"> <li>• He worked as a teacher in college of nursing from 2004-2016 during these periods of time, he tried to work in collaboration with university and health sectors to improve nurse's role and participated in many education trainings courses. Also, he worked to introduce graduated nurses from the college of nursing as new models of career in Erbil city's hospitals.</li> <li>• 2006 until 2010, Head of Planning &amp; Follow up Department in College of Nursing.</li> <li>• 2004-2016 experience in Journalism field, writing many articles in newspapers and websites.</li> <li>• Excellent computer skills in the whole Windows and Microsoft Office versions.</li> <li>• More than 20 years' experience in managing of Companies administration.</li> <li>• He has been assigned as laboratory demonstrator in the Laboratory department between 2004-2016 in Nursing College, Hawler Medical University. This included practical Biology (such as Zoology, and Pathogenic Bacteria, Physiology and Biochemistry) in the laboratories.</li> </ul>

- He started to study M.Sc./Microbiology in 2019, at department of Biology/ College of Education/Shaqlawah, Salahaddin University-Erbil. Then, he started to work in the same department, as an assistant lecturer.
- Member of the examination committee for College of Nursing from 2010-2016 except 2012, and at College of Education/Shaqlawah, from 2019 till now.
- He worked as Registrar of college of Education /shaqlawa from 2019-2021.
- Now, he is working as Head of Biology Department, college of Education /shaqlawa from 01-01-2021 till now.
- Has six published researches from International Journals around Microbiology specialist.

### Research and publications

- Has five published researches and one acceptance letter from International Journals around Microbiology specialist as following:

**1. Neonatal sepsis: Bacteriological profile, molecular detection and antimicrobial susceptibility test among pre-term pediatrics in Erbil city, Iraq.** <https://zjms.hmu.edu.krd/index.php/zjms/article/view/767>

**2. Molecular detection of  $\beta$ -lactamase genes in Klebsiella pneumoniae and Escherichia coli isolated from different clinical sources.)** <https://pubmed.ncbi.nlm.nih.gov/35809290/>

**3. Impact of Alcoholic and Aqueous Extracts of Annona Muricata on the Growth of Staphylococcus aureus and Escherichia coli Isolates.** [https://svu.journals.ekb.eg/article\\_273914.html](https://svu.journals.ekb.eg/article_273914.html)

**4. Serological Diagnosis and Epidemiological impact of Helicobacter pylori infection on human health in Diyala Governorate, Iraq.** <https://tjps.tu.edu.iq/index.php/tjps/article/view/57>

**5. Prevalence of Hepatitis B Virus Infection among General People and Hemophilia Patients in Erbil City, Iraq during 2020-2021.** [https://ejhm.journals.ekb.eg/article\\_277513.html#:~:text=Results%3A%20The%20overall%20HBV%20infection,caused%20by%20visiting%20dental%20clinics.](https://ejhm.journals.ekb.eg/article_277513.html#:~:text=Results%3A%20The%20overall%20HBV%20infection,caused%20by%20visiting%20dental%20clinics.)

**6. Application of Salmonella phages to reduce in-vitro and in-vivo colonization of Salmonella enteritidis and Salmonella typhi) Zanco J. Med. Sci., (Acceptance letter).**

### Training course & conferences:

- June, 2000, Ishik Language Center, participant in WOW course (Window of the World).
- June 2005, Participant in First Nursing conference of Salahaddin University- Erbil.
- Dec. 2006, participant in E-Learning Courses in college of Nursing broadcasted from Greece supported by KLIMAKA NGO.
- July, 2007 participant in Internet & Computer Courses in Technical Institute by KPA Center.

	<ul style="list-style-type: none"> <li>• 2016-2019, completed four levels in face2face English language learning (Starter, Elementary, Pre-intermediate and Intermediate) in CIS institute center.</li> <li>• Competition of the pedagogical training for teacher professional development (30 ECTS) from 01.12.2019 - 01.06.2020.</li> </ul> <p><b>Membership of professional Bodies:</b></p> <ul style="list-style-type: none"> <li>• Member of Syndicate of Kurdistan Biological.</li> <li>• Member in Erbil Trading &amp; Commercial Chamber.</li> <li>• Member in Kurdistan Journalists Syndicate.</li> <li>• Member in Kurdistan Teachers Union.</li> </ul> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• Prof. Dr. Badia Mohammed Najeeb, College of Nursing, Hawler Medical University, Erbil, Iraq. Mob.: 0750 488 80 59.</li> <li>• Prof. Dr. Adel Kamal Khedir, Department of Biology, College of Education, Salahaddin University- Erbil, Iraq. Mob.: 0750 447 29 08.</li> <li>• Assist. Prof. Dr. Farhad Ali Mustafa, Dean of College of Education/Shaqalawa, Salahaddin University- Erbil, Iraq. Mob.: 0750 455 39 19.</li> </ul>
<p><b>9. Keywords</b></p>	<p>Microbiology, Bacteria, Microbes and Microorganisms</p>
<p><b>10. Course Description:</b>                  Blood bank is a place where blood obtained through blood donation is stored and preserved for later use. The preserved blood is later used for blood transfusion.                  The main subject areas will include blood collection and its necessary equipment, the blood donation and how to select the suitable donors, screening of blood for infections, and the processes of transfusion with its practices. Blood compatibility tests, plasma and cellular components, and safety procedures are covered in this course.                  This text is designed for phlebotomists and laboratory staff in training and in practice. The work presented in this course will be of benefit to medical students that interested in donation and transfusion of blood.</p>	
<p><b>11. Course objective:</b></p> <ol style="list-style-type: none"> <li>1. Understand blood banking processes</li> <li>2. Understand the important roles of blood banks in surgery and emergency departments.</li> <li>3. Understand the details and purposes of transfusion of blood components.</li> <li>4. Understand the necessary steps for blood safety.</li> <li>5. Be familiar with the collection, donation, and transfusion of blood.</li> </ol>	
<p><b>12. Student's obligation</b></p> <ul style="list-style-type: none"> <li>• Attendance 85-90% of lectures.</li> <li>• Completion of all the requirements quizzes, exams, reports, assignments, seminar's, .... etc.</li> <li>• Participation in the laboratory works (practical lectures).</li> </ul>	

### 13. Required Learning Materials

- The lectures showed by data show and the explanations discussed in the hall and at the same time the students will have a copy of the lectures.
- The lectures will be available on line (Moodle platform)
- Lab. Instruments and materials will used in Practical lectures.

### 14. Assessment scheme:

No.	Exam (Evaluation)	Marks
1	Student presence	1%
4	Lab Activities	4%
5	Mid-term Exam	35%
6	<b>Total Scores</b>	<b>40%</b>

### 15. Student learning outcome:

- Students after this course will be able to identify the potential donors, carry out the necessary tests and operate relevant equipment. Then Learning how to deal with the donors and patients.
- The main aim of Blood bank course is to train students about blood bank technology and turn them into skilled blood bank technicians. Skilled blood bank technicians ensure the smooth functioning of a blood bank.

### 16. Course Reading List and References

- Wong, T. (2021). Transfusion Medicine. In Blood and Marrow Transplant Handbook (pp. 187-199). Springer, Cham.
- Lozada, M. J., Cai, S., Li, M., Davidson, S. L., Nix, J., & Ramsey, G. (2019). The Las Vegas mass shooting: an analysis of blood component administration and blood bank donations. *Journal of Trauma and Acute Care Surgery*, 86(1), 128-133.
- Christopher D. Hillyer (2007). *Blood Banking and Transfusion Medicine: Basic Principles & Practice*. Elsevier Health Sciences.
- Hillyer, Christopher D., Christopher Hillyer, Ronald Strauss, and Naomi Luban, eds. *Handbook of pediatric transfusion medicine*. Elsevier, 2004.

### 17. The Topical Theory

- Overview and introduction to Blood bank
- Blood donation
- Blood transfusion
- Collection and processing
- Storage and management
- Screening donated blood
- ABO Blood group system
- Rh Factor
- Haemorrhage
- Haemostasis and platelet
- Coagulation cascades
- Thrombosis
- Transfusion Medicine
- Donor and patient education

### 18. Questions Example Design:

#### 1- Compositional:

What are the main purposes of the cross-match?

What are the types of blood bags? Explain its uses.

Enumerate 5 conditions not allowed for blood donation permanently.

What are the percentages of each blood group in the population?

#### 2- True or false type of exams:

Primary hemostasis is consisting of clots form by the conversion of fibrinogen to fibrin.

Blood type O+ is considering the universal donor of plasma.

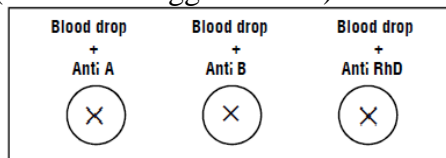
#### 3- Fill in the blanks:

The disorder in the fetus due to Rh D incompatibility is known as .....

Coagulation factors are produced by ..... and circulate in an inactive form until the coagulation cascade is initiated.

#### 4- Find the blood group of following:

(√for Agglutination) (X for Non-Agglutination)



- Forward method
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### 19. Extra notes and Review