Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Course Description
Academic Program GuideAcademic and Course Program and

Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through

internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work. In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extracurricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: ....Isut

Faculty/Institute: .....Isut

Scientific Department: ..medical Laboratory Techniques

Academic or Professional Program Name: ..medical Laboratory

Final Certificate Name: medical laboratory Techniques

Academic System: ...Courses

Description Preparation Date: 4/4/2024

File Completion Date: 7/5/2024

Signature:

Head of Department Name:

Ass. prof. Lamia H. Ismet

Date: 8/10/2024

Signature:

Scientific Associate Name:

prof Abdulzahra Mihaisin

Date: 10/10/2024

The file is checked by: Dr. Ali Saad Alwan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 2024/10/14

Signature:

Approval of the Dean

1.**Program Vision**
The Medical Laboratory Techniques Department of the AL-kutcollege an example to be followed at the local and regional levels.
2.**Program Mission**
The Medical Laboratory Techniques Department is committed to the Colleg Health and Medical Techniques of Al-kut to prepare distinguished graduat with competitiveness and to meet the requirements of labour market an scientific research in the fields of medical laboratories for service of society an the environment in the field of laboratories and med services through th development of skills, attention to external scient dissemination in specialize scientific journals, the organization of conferenc the holding of training course and scientific symposia, the management implementation of research project and the provision of technical advice cooperation with universities, institute and research centers at home and abroad achieve the objectives of sustainabl development .
3.**Program Objectives**

1. The purpose of the Department is to prepare medical technical personnel specialized in medical laboratory science and pathological analysis.
2. Treatment of tests of a laboratory analytical nature so that graduates can work in public and private health institutions.
3. Creation of specialized personnel capable of keeping pace with scientific and technical medical development in the field of diagnosis based on the results of pathological analysis.
4. Complete the diagnosis by integrating with other health branches and departments.
5. Provide the local market with specialized expertise in health in general and laboratory in particular.
6. To emphasize the accuracy of the work and to adopt proper results of the tests, since they play an effective role in the diagnosis of health injuries and diseases in order to assist in their treatment as soon as possible.
7. Actively contribute to scientific research by investing the Department ' s laboratories in assisting professors and specialists to complete scientific research requirements in the service of society and to achieve sustainable development goals.
8. 8- Creating a supportive medical army to deal with all epidemics and spreading diseases at any time.
9. 9- Preparing postgraduate students who will contribute to the process of developing the

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infrastructure of medical and academic institutions by dealing with highly accurate and more advanced medical examinations that keep pace with medical modernity in the field of pathological analyses, giving medical lectures, and holding scientific workshops to serve the community and achieve sustainable development goals.

4.**Program Accreditation**

Does the program have program accreditation? And from which agency?

No

5.**Other external influences**

Is there a sponsor for the program?

No

6.**Program Structure**

Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements				
College Requirements				
Department Requirements	**28**	**59**		
Summer Training		**Other**		

* This can include notes whether the course is basic or optional.

7.Program Description

Year/Level	Course Code	Course Name	Credit Hours	
The first stage - the first course			theoretical	practical
		General chemistry 1	2	4
		Medical terminology	1	-
		Human biology 1	2	4
		Laboratory instruments 1	1	2
		Medical ethics	2	-
		Computer Applications 1	1	2
		Human rights	2	-
		English language	2	-
The first stage - the second course		General chemistry 2	2	4
		Anatomy	2	4
		Human biology 2	2	4
		Laboratory instruments 2	1	2
		Computer Applications 2	1	2
		Arabic language	2	-

The second stage - the first course		Medical Bacteriology 1	2	4
		Biochemistry1	2	4
		Human physiology1	2	2
		Histology1	2	2
		Molecular Biology1	2	4
		Medical Parasitology 1	2	4
The second stage - the second course		Medical Bacteriology 2	2	4
		Biochemistry2	2	4
		Human physiology2	2	2
		Histology2	2	2
		Medical Parasitology 2 & Entomology	2	4
		Descriptive Biostatics	1	2

8.Expected learning outcomes of the program	
Knowledge	
	Demonstrate knowledge and understanding of basic biomedical sciences (biology, chemistry, anatomy, histology, physiology, human genetics, and molecular biology) .

1. Familiarity with the basic medical sciences . 2. Determining theetiology, pathogenesis, clinical manifestations, differential diagnosisand complications of various infectious and noncommunicable diseases at different stages of human life . 3. Recognize the principles of epidemiology, prevention and control of communicable and noncommunicablediseases . 4. Demonstrate knowledgeand understanding of legal and medical ethics, patient rights, and humanrights related to medical practices. 5. Apply the principles ofhistory and physical examination taking into account patients' mentalstatus and sociocultural background . 6. Demonstrate an understanding of medical or health research and basic statistics . 7. Knowledge of quality control standards for the results of various laboratory analyzes .	Demonstrate understanding of the principles and procedures of biochemistry, hematology, immunology, microbiology, parasitology as well as blood banking laboratory investigations . Identify and describe the mechanisms of various metabolic processes in physiological and pathological conditions . Identify, process, store, and transport various biological sample collections. Demonstrate awareness of research design, epidemiology and appropriate use of statistical analyzes to enable correct interpretation of experimental results . Integrate knowledge of various major disciplines and current laboratory methods available to enhance their understanding of the study, investigation, diagnosis and monitoring of human health and disease in clinical and research settings . Identify the analytical variables that affect test accuracy and take the necessary measures . Demonstrate awareness of the applicability of laboratory medicine to careers/specialization that graduates may wish to pursue.

Skills

1. Performing various analyzes and interpreting their results respecting of history and physical examination results . 2. Analyze and interpret data obtained from medical history and clinical examinations to reach a final diagnosis . 3. Apply critical thinking and clinical evidence to problem solving in diagnosis . 4. Design appropriate management plans for common medical conditions and emergencies . 5. Analyze and interpretdata obtained from medical Selection of appropriate analyzes relevant todifferential diagnoses taking into account availability andcost-effectiveness . 6. Providing health education, counseling and appropriate preventive services . 7. Work with modern laboratory equipment, techniques to give accurate and logical information for various laboratory analyses . 8. Interpreting illogical laboratory results and using statistical methods when evaluating data . 9. Implementation of quality control measures and active participation in quality control programs . 10. Implementation of control practices to prevent the spread of infection, and management of medical waste . 11. Apply research and statistical methods to identify, analyze and solve health	**1-** Integrating concepts and principles of basic and applied medical sciences to formulate and test a hypothesis . **2-** Troubleshoot technical errors and interpret results with professional competence. **3-** Use critical thinking and problem-solving skills to make evidence-based decisions . **4-** Analyze and evaluate evidence-based information required in the practice of laboratory medicine . **5-** Implement quality management system and biosafety procedures in laboratory practice. **6-** Apply technical skills in using laboratory equipment, tools, and materials in laboratory practice . **7-** Collect, transport, preserve and store samples according to standard operating procedures (SOPs) **8-** Employing different methods in diagnosing various diseases related to (biochemical, hematology, immunology, microbiology, and parasitology). **9-** Applying standard procedures in blood banking and blood transfusion services **10-** Use appropriate manual and automated techniques in laboratory investigations. **11-** Prepare, process, interpret and present data using appropriate qualitative and quantitative techniques, statistical software and spreadsheets to present data.

problems for further planning. 12.Collection, preparation transportation and preservation of clinical samples	
Ethics	

1. Promote effective communication with patients, laboratory personnel, and healthcare professionals . 2. Work efficiently within a multidisciplinary team and demonstrate the ability to build positive working relationship 3. Recognize and respect the contributions made by other health care professions . 4. Develop a lifelonginterest in continuing learning, improving skills, and acquiring andapplying modern knowledge and new skills . 5. Use health information technology and present information clearly in written, electronic and oral forms . 6. Managing time and resources, setting priorities and dealing with stress in all situations . 7. Recognize professional limitations and seek advice when needed. 8. Adopt professionalbehavior in all aspects of the practice, demonstrating honesty ,commitment, integrity and compassion and putting patient care first andrespecting the different cultural beliefs and values in the communitythey serve and ensuring the privacy of patient information . 9. Commitment to professional standards and rules of the profession and respect the confidentiality and privacy of patients . 10. Show respect for different cultures, religions and values and treat all patients equally regardless of their background .	**1-** Participate in teamwork harmoniously and demonstrate cooperation with colleagues and other healthcare professionals. **2-** Communicate effectively using appropriate scientific language orally and in writing. **3-** Effective use of computer skills as well as information and communication technologies. **4-** Engage in continuing education and lifelong learning. **5-** Conducting research projects in the field of laboratory medicine with a sense of social responsibility. **6-** Conducting research projects in the field of laboratory medicine with a sense of social responsibility. **7-** Understand their own responsibilities and professional limitations and follow the rules of medical organizations and body regulations. **8-** Demonstrate ethical behavior with patients, colleagues and healthcare workers. **9-** Demonstrate ethical behavior with patients, colleagues and healthcare workers. **10-** Demonstrate ethical behavior with patients, colleagues and healthcare workers.

11-Teaching and Learning Strategies

Lectures and practical lessons - outcome-based learning - learning projectbased learning - group work-based learning - problem-based learning - community-based learning - self-learning.

12-Evaluation methods

Implemented in all stages of the program in general.

Theoretical and practical (clinical) exams, rapid exams, and classroom activities.

Professional Development Mentoring

new faculty members

Informing new teachers of the vocabulary of the academic curriculum, the mechanism for its implementation, and how to develop the study plan within the available time frame, along with the mechanisms and method of dealing with students, and methods of evaluating students.

Professional development of faculty members

Urging and training teachers to develop curriculum vocabulary, introduce scientific developments, and use different teaching and learning strategies in teaching (outcome-based learning - learning project-based learning - group work-based learning - problem-based learning - community-based learning - self-learning) and mechanisms And calendar methods.

13-Acceptance Criterion

(Admission is central and according to instructions issued by the Ministry of Higher Education. Acceptance rates and student numbers are determined annually by the Ministry).

14-The most important sources of information about the program

- University registration management.
- Department management
- The college's official website on the Internet

15-Program Development Plan 1.
Periodic review of courses.

2. Preparing annual reports for the courses, specifying the development plan for the course.
3. Follow the system of internal and external evaluators for the program
4. Active participation of program beneficiaries in developing the program.
5. Conducting educational workshops and advanced courses in the practical aspect
6. Organizing summer training hours to develop craft skills

Course Description Form

1. **Program Vision**
Program vision is written here as stated in the university's catalogue and website.

2. **Program Mission**
Program mission is written here as stated in the university's catalogue and website.

3. **Program Objectives**
General statements describing what the program or institution intends to achieve.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency?

5. **Other external influences**
Is there a sponsor for the program?

6. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. **Program Description**

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:
Computer Applications
2. Course Code:
ML16
3. Semester / Year:
The first and second for the initial academic year
4. Description Preparation Date:
31-1-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
1 theoretical hour plus 2 practical hours
7. Course administrator's name (mention all, if more than one name)
Name: MSC. Ali Kareem Abed Email:alikareemit9@gmail.com Name : MSC. Zaniab Hameed Kadhim
8. Course Objectives

Course Objectives	Providing students with computer knowledge, including understanding its components, different types of operating systems, and various applications, as well as office software

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1 + 2 + 3	6	• Introduction to computer devices • Computer components • Input and output devices • Types of memory	Computer's components	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
4 + 5 + 6 + 7 + 8	10	• Computer operating systems Comprehensive understanding of As well as Fundamentals of operating systems All types of computers OS Its goals and categorization As well as the structure Fundamental functioning dos with its commands Internal and external And pertaining to administration Files and directories	Operating System	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

9 +10 +11	6	Installation Requirements Windows 7 • Desktop components • Taskbar icons • Desktop background • Control Panel	Windows 7	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
12 + 13 + 14	6	• Introduction to using the Microsoft Word program • Interface components of the program • File tab • Insert tab • Page tab • Main • Design tab	**Microsoft office word 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
15 + 16+ 17	6	• Review the language checking tab and comments, along with other program features.	**Microsoft office word 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

18 + 19 + 20 + 21 + 22	10	• Introduction to Microsoft Excel • Interface components of the program File tab Insert tab Page tab Main Data tab • Mathematical functions in Excel Program • Statistical functions in Excel program	**Microsoft office excel 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
23 + 24 + 24 + 26 + 27	10	Introduction to Microsoft PowerPoint • Interface components of the program • File tab • Home Tab • Insert tab • Design Tab	**Microsoft Office PowerPoint 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

28 + 29 + 30	6	**Internet and electronic mail**	**Internet and electronic mail**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports

11. Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

15. **Program Vision**
• Establishing specialized medical laboratories

• Creating postgraduate studies (master's and doctorate) in pathological analysis specializations
• Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

16. **Program Mission**

The program mission is written here as stated in the university's catalog and website.

17. **Program Objectives**

1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment.

2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria.

3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them.

4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.

5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections.

6 - The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.

7 - Its ability to deal with all modern technologies, including DNA analysis and

forensic medicine

18. Program Accreditation

Does the program have program accreditation? And from which agency?

19. Other external influences

Quality Assurance Program of the Ministry of Higher Education and Scientific Research

20. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

21. Program Description

Credit Hours		Course Name	Course Code	Year/Level
Practical	theoretical			
4	2	GeneralChemistry	**ML11**	First-year
4	2	Anatomy&MedicalTerminology	**ML12**	
4	2	Humanbiology	**ML13**	
3	1	Lab.Instrumentation	**ML14**	
--	2	MedicalEthics	**ML15**	
2	1	ComputerApplication	**ML16**	
--	1	Humanrights	**ML17**	
	1	EnglishLanguage	**ML18**	
4	2	MedicalMicrobiology	**ML21**	
4	2	ClinicalBiochemistry	**ML22**	

2	2	Humanphysiology	**ML23**	Second Year
2	2	Histology	**ML24**	
4	2	MolecularBiology	**ML25**	
4	2	Medicalparasitology	**ML26**	
	1	EnglishLanguage	**ML27**	
3	2	Histopathology	**ML31**	Third year
3	2	Hematology	**ML32**	
2	2	Virology& Mycology	**ML33**	
2	2	ClinicalChemistry	**ML34**	
3	2	Cytogenetic	**ML35**	
2	2	Immunology	**ML36**	
2	2	Advancedlaboratorytechnique	**ML37**	
2	1	ComputerApplication	**ML38**	
	1	EnglishLanguage	**ML39**	
4	2	ClinicalImmunology	**ML41**	Four year
4	2	DiagnosticMicrobiology	**ML42**	
4	2	AdvanceClinicalbiochemistry	**ML43**	
4	2	Parasitology	**ML44**	
4	2	Bloodtransfusion	**ML45**	
2	3	Histopathology	**ML46**	
	1	LaboratoryManagement	**ML47**	
	1	EnglishLanguage	**ML48**	
2	1	Biostatic	**ML49**	
5		Project	**ML410**	

22. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

23. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

24. Evaluation methods

Implemented at all stages of the program in general.

25.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members

Briefly describe the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

26.Acceptance Criterion

Central admission to the Ministry of Higher Education and Scientific Research)

27.The most important sources of information about the program

Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

28.Program Development Plan

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

13.Course Name:
Professional conduct
14.Course Code:
15.Semester / Year:
First /2024
16.Description Preparation Date:
3\2\2024
17.Available Attendance Forms:
Official working hours
18.Number of Credit Hours (Total) / Number of Units (Total)
Number of hours (2) / Number of units (4)
19. Course administrator's name (mention all, if more than one name)
Name: M.Sc. Jaafar Joudah kareem M.Sc. wameedsabah shukur Lect . dr Ghassan jabbar khalaf M.Sc. Hossam fadhil hasan Email:jaffarjuda@gmail.com Husamfadhil2@gmail.com wameedalasaady@gmail.com
20.Course Objectives

Course Objectives	**Make the student familiar with the appropriate method for dealing with patie devices, and equipment in the field of work**

21.Teaching and Learning Strategies

Strategy	- Self-learning, discussion panels. - Exercises and activities in the classroom - Directing students to some websites to benefit from them to develop their capabilities.

22. Course Structure
23.Course Evaluation
Participation in the classroom.

Providing various activities. - Not less than four written semester exams during the academic year, in addition to the theoretical final exam .

24.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

29.**Program Vision**
Vision Statement: *Elevating Healthcare through Excellence in General Chemistry Education* *Overview:* *The Department of Medical Laboratory Techniques envisions a General Chemistry program that*

serves as the cornerstone for producing skilled and knowledgeable laboratory professionals committed to advancing healthcare. Our vision is to provide a transformative educational experience that seamlessly integrates the principles of General Chemistry into the specialized context of medical laboratories. Through innovation, collaboration, and a steadfast commitment to excellence, we aim to nurture a cadre of laboratory professionals who contribute significantly to the improvement of healthcare outcomes.

Core Principles:

1. *Integration of Chemistry in Healthcare: We envision a program that seamlessly weaves the principles of General Chemistry into the fabric of medical laboratory practices. Our students will develop a profound understanding of the chemical foundations underpinning diagnostic and analytical processes critical to healthcare.*
2. *Cutting-edge Technology and Techniques: Embracing technological advancements, our program is committed to providing students with hands-on experience in state-of-the-art laboratories. We aim to expose students to the latest analytical techniques, instrumentation, and methodologies relevant to the evolving landscape of medical laboratory science.*
3. *Interdisciplinary Collaboration: Recognizing the interconnected nature of healthcare, we foster a collaborative learning environment. Our program encourages interdisciplinary interactions between students and professionals from various healthcare disciplines to simulate real-world scenarios and promote a holistic approach to patient care.*
4. *Ethical Practice and Quality Assurance: We instill a strong commitment to ethical conduct and quality assurance in our students. Our vision is to produce laboratory professionals who adhere to the highest standards of integrity, ensuring the accuracy and reliability of laboratory results crucial to patient diagnosis and treatment.*
5. *Professional Development and Lifelong Learning: Our program is dedicated to producing graduates who are not only well-prepared for immediate entry into the workforce but are also equipped with a mindset for continuous learning and professional development. We envision our alumni as lifelong learners who stay abreast of emerging trends in both General Chemistry and medical laboratory sciences.*

Outcome:

Upon completion of the General Chemistry program in the Department of Medical Laboratory Techniques, our graduates will emerge as highly skilled and ethical laboratory professionals. Equipped with a solid foundation in General Chemistry, specialized knowledge in medical laboratory techniques, and a commitment to excellence, our alumni will play a crucial role in advancing healthcare outcomes, contributing to disease diagnosis, treatment, and prevention.

This vision statement aligns the General Chemistry program with the specific needs and goals of the Department of Medical Laboratory Techniques, emphasizing the integration of chemistry into the context of healthcare and the development of professionals who contribute meaningfully to the field.

30. **Program Mission**

Mission Statement:

Preparing Future Healthcare Leaders through Comprehensive General Chemistry Education
Objectives:
Educational Excellence: Deliver a rigorous General Chemistry curriculum for a solid understanding of chemical principles in medical laboratory sciences.
Hands-On Learning: Provide practical, hands-on experiences in state-of-the-art laboratories to bridge theory with application.
Interdisciplinary Integration: Seamlessly integrate General Chemistry with other medical laboratory disciplines, fostering collaboration skills.
Ethical Practice: Instill a strong sense of ethics, integrity, and responsibility in laboratory practices.
Research and Innovation: Cultivate a culture of curiosity, encouraging research in General Chemistry applications for healthcare improvement.
Global Awareness: Foster global awareness and cultural competence in healthcare practices for versatile and adaptable professionals.
Impact:
Graduates will excel in applying General Chemistry concepts, demonstrating critical thinking, ethical conduct, and innovative solutions to elevate healthcare standards and improve patient outcomes.

31. **Program Objectives**

Program Objectives:

- Conceptual Mastery: Attain a profound understanding of General Chemistry principles for effective problem-solving.
- Laboratory Proficiency: Develop strong practical skills in laboratory techniques.
- Interdisciplinary Integration: Seamlessly integrate General Chemistry with other medical laboratory disciplines.
- Ethical Professionalism: Instill values of ethics and professionalism, emphasizing responsible laboratory practices.
- Research and Innovation: Encourage research and innovation in applying General Chemistry to healthcare.
- Global Awareness: Increase global awareness and foster cultural competence among students.
- Professional Certification Readiness: Prepare students for relevant certifications in medical laboratory sciences.
- Continuous Learning: Cultivate a mindset of continuous learning and professional adaptation to emerging trends.
- Communication Skills: Enhance effective written and oral communication skills.
- Community Engagement: Encourage active participation in community service, showcasing the positive impact of General Chemistry in healthcare.

32. Program Accreditation

Does the program have program accreditation? And from which agency?

33. Other external influences

The Quality Assurance Program for the Ministry of Higher Education and Scientific Research.

34. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**2 Semester**	**8**	**19%**	**Basic courses in general studies.**
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

35. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First Year		**General Chemistry 1 & 2**	**2**	**5**

36. Expected learning outcomes of the program

Knowledge

Analytical Chemistry Learning Outcomes:	1. **Precision in Techniques:** Demonstrate precision in analyzing substances with various techniques. 2. **Instrumentation Proficiency:** Proficiently operate and maintain analytical instruments. 3. **Data Analysis Skills:** Analyze and interpret complex analytical data accurately. 4. **Quality Assurance Practices:** Implement quality assurance practices for reliable results. 5. **Problem-Solving Ability:** Develop problem-solving skills for troubleshooting issues.
Organic Chemistry Learning Outcomes:	1. **Understanding Organic Compounds:** Understand the structure, properties, and reactions of relevant organic compounds. 2. **Chemical Synthesis Competence:** Acquire competence in chemical synthesis techniques.

Cross-Cutting Learning Outcomes:	3. **Functional Group Recognition:**Identify functional groups within organic molecules. 4. **Safety Protocols:**Implement safety protocols when working with organic chemicals. 5. **Integration with Clinical Applications:**Integrate organic chemistry principles with clinical applications. 1. **Interdisciplinary Collaboration:** Collaborate with professionals from various medical laboratory disciplines. 2. **Effective Communication:** Develop effective communication skills for conveying findings. 3. **Ethical Conduct:** Embrace ethical conduct in laboratory practices.
Skills	
Learning Outcomes 2	1.**Lab Techniques Proficiency:** Attain proficiency in essential medical lab techniques. 2.**Critical Thinking:** Develop strong problem-solving skills. 3.**Data Collection and Analysis:** Acquire accurate data analysis skills. 4.**Instrumentation Operation:** Demonstrate competence in using diverse lab instruments. 5.**Communication Skills:** Enhance effective written and oral communication. 6.**Team Collaboration:** Collaborate effectively in interdisciplinary teams. 7.**Safety Practices:** Adhere rigorously to strict safety protocols. 8.**Quality Assurance:** Implement measures for result quality and accuracy. 9.**Research Competence:** Develop research skills for lab sciences. 10.**Adaptability:** Cultivate adaptability and commitment to continuous learning. 11.**Ethical Conduct:** Demonstrate unwavering ethical and professional conduct. 12.**Time Management:** Master effective time management.
Ethics	
Learning Outcomes 3	1.**Ethical Awareness:** Develop heightened awareness of ethical considerations. 2.**Moral Reasoning:** Enhance skills in moral reasoning for complex dilemmas. 3.**Professional Integrity:** Cultivate commitment to professional integrity. 4.**Confidentiality Practices:** Adhere to strict confidentiality for sensitive information. 5.**Respect for Diversity:** Demonstrate respect for diversity in all contexts. 6.**Informed Decision-Making:** Make informed decisions considering ethical implications. 7.**Accountability:** Embrace accountability for ethical consequences. 8.**Ethical Communication:** Develop effective communication for ethical concerns. 9.**Ethical Leadership:** Foster qualities of ethical leadership. 10.**Continuous Ethical Education:** Commit to ongoing education

	on ethical standards and challenges.

37. Teaching and Learning Strategies

1.**Active Learning:** Engage students through active participation and collaboration.
2.**Interactive Lectures:** Conduct interactive lectures for enhanced student involvement.
3.P**ractical Demonstrations:** Provide hands-on demonstrations to reinforce theoretical concepts.
4.**Case-Based Learning:** Apply theoretical knowledge to real-world scenarios through case-based learning.
5.**Group Discussions:** Promote critical thinking through group discussions.
6.**Technology Integration:** Enhance learning experiences with technology tools and platforms.
7.**Peer Teaching:** Foster teamwork and communication skills through peer teaching.
8.**Assessment Diversity:** Use various assessments to accommodate diverse learning styles.
9.**Feedback Mechanisms:** Provide constructive feedback and support student improvement.
10.**Inclusive Teaching:** Implement practices to cater to diverse student backgrounds and needs.
These strategies create a dynamic and inclusive learning environment, promoting engagement and knowledge application.

38. Evaluation methods

1.**Formative Assessment:** Ongoing assessments for feedback during the learning process.
2.**Summative Assessment:** Comprehensive evaluations at the end of learning periods.
3.**Continuous Evaluation:** Assessment throughout tasks and assignments.
4.**Practical Examinations:** Hands-on assessments for practical skills.
These methods offer a comprehensive evaluation of understanding, skills, and practical application in diverse learning scenarios.

39.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Dr. Ghassan Mahmoud Ibrahim	Chemistry	Analytical Chemistry			10	
Dr. Aoras Ameen Kadhime	Chemistry	Organic Chemistry			10	
M.Sc. Mohammed Bahaa Mohsin	Chemistry	Biochemistry			10	

Professional Development

Mentoring new faculty members

1.**Orientation:** Comprehensive sessions on policies and academic culture.
2.**Assigned Mentors:** Experienced mentors guide new faculty on teaching, research, and institutional dynamics.
3.**Professional Development:** Access to workshops and conferences for skill enhancement.
4.**Resource Sharing:** Platforms for sharing teaching and research materials.
5.**Performance Evaluation Support:** Guidance on goal-setting and career advancement.
This streamlined process aims to integrate faculty effectively, fostering professional growth and contributing to institutional success.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

40.Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

41.The most important sources of information about the program

State briefly the sources of information about the program.

42.Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Cours Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Year 1		General Chemistry 1	Basic	X	X	X	X	X	X	X	X	X	X		
		General Chemistry 2	Basic	X	X	X	X	X	X	X	X	X	X		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation**

Course Description Form

25.Course Name:
General Chemistry 1
26.Course Code:
27.Semester / Year:
Semester 1/ Year 1
28.Description Preparation Date:
1/1/2023
29.Available Attendance Forms:
In-person
30.Number of Credit Hours (Total) / Number of Units (Total)
Credit Hours (7) / Number of Units (4)
31. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Ghassan Mahmoud Ibrahim Email:*gibrahim00@yahoo.com* Name: Dr. Aoras Ameen Kadhime Email:*schuttberg@yahoo.com* Name: M.Sc. Mohammed Bahaa Mohsin Email:*mohammedbahaa783@gmail.com*
32.Course Objectives

Course Objectives	• **Foundation: Build a solid understanding of general chemistry principles for analytical lab applications.** • **Proficiency: Develop skills in utilizing analytical techniques for effective data analysis in the lab.** • **Critical Thinking: Foster critical thinking for applying theoretical concepts in practical analytical scenarios.**

33.Teaching and Learning Strategies

Strategy	**1. Active Learning: Engage students through participation, discussions, and practical experiences for a dynamic learning environment.** **2. Technology Integration: Use multimedia and interactive tools to enhance learning experiences and accommodate diverse learning styles.** **3. Assessment Diversity: Employ various assessment methods, including projects and Homework, to comprehensively evaluate student understanding.**

1.

2. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2	General Chemistry	Introduction to chemistry (matter, structure of atom, periodic table, isotopes, atomic number, mass number, composition of matter, types of bonds)	Theoretical and Practical	Quizand Project calculation
2	2	Analytical chemistry	Methods of analysis, Types of Solution, preparation of standard solution unit, concentration, percentage.	Theoretical and Practical	Quizand Project
3	2	Analytical chemistry	Molar solution, Normal solution, parts per million	Theoretical and Practical	Quizand Project
4	2	Analytical chemistry	Acid base theory, types of Chemical reactions, PH, neutralization reaction	Theoretical and Practical	Quizand Project
5	2	Analytical chemistry	Periodic table, equilibrium constant,buffer solution Acid-base titration, oxidation -reduction reaction	Theoretical and Practical	Quizand Project
6	2	Analytical chemistry	Acid-base titration, oxidation -reduction reaction	Theoretical and Practical	Quizand Project
7	2	Analytical chemistry	Spectroscopy (Optical spectroscopy, Beer's lambert law)	Theoretical	Quiz
8	2		Review and exam		
9 10	4	Organic chemistry	Structure of carbon compounds (alkanes, alkenes, alkynes, halogen compound)	Theoretical and Practical	Quizand Project
11	2	Organic chemistry	Alcohols, classification, properties, reaction,	Theoretical and Practical	Quizand Project
12	2	Organic chemistry	Aldehydes and ketones properties reaction	Theoretical and Practical	Quizand Project
13 14	4	Organic chemistry	Carboxylic acid, Aromatic, Hydrocarbon	Theoretical and Practical	Quizand Project
15	2	Organic chemistry	Amines, properties, chemical reaction	Theoretical and Practical	Quizand Project

3. Course Evaluation

1. Assignments and Class Participation: 10 % of grade
2. Midterm Exams: 30% total (15% each) towards final grade
3. Lab work: 15 %
4. Final Exam: 35 % total towards final grade
5. Lab work: 25 % of final grade

4. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	"Fundamentals of Analytical Chemistry" *F. JAMES HOLLER STANLEY R. CROUCH* "Organic Chemistry", *Morrison& Boyd*
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

34.Course Name:
General Chemistry 2
35.Course Code:

36.Semester / Year:
Semester 2/ Year 1
37.Description Preparation Date:
1/1/2023
38.Available Attendance Forms:
In-person
39.Number of Credit Hours (Total) / Number of Units (Total)
Credit Hours (7) / Number of Units (4)
40. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Ghassan Mahmoud Ibrahim Email:*gibrahim00@yahoo.com* Name: Dr. Aoras Ameen Kadhime Email:*schuttberg@yahoo.com* Name: M.Sc. Mohammed Bahaa Mohsin Email:*mohammedbahaa783@gmail.com*
41.Course Objectives

Course Objectives	• **Foundational Knowledge: Build a solid understanding of biochemistry principles in the medical laboratory context.** • **Clinical Application: Apply biochemistry concepts for practical use in clinical settings.** • **Laboratory Skills: Develop proficiency in biochemical techniques for effective medical laboratory work.**
42.Teaching and Learning Strategies	
Strategy	**1. Integrated Learning: Integrate biochemistry principles with practical applications tailored to medical laboratory sciences.** **2. Hands-On Experience: Prioritize practical, hands-on experiences in the laboratory to reinforce theoretical concepts.** **3. Clinical Connection: Emphasize the clinical relevance of biochemistry, linking theoretical knowledge to medical diagnosis and treatment in the laboratory.**

5.					
6. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-2	4	Principle Biochemistry	Carbohydrates: Definition, Biological functions, Classification.	Theoretical and Practical	Quizand Project calculation
3-4	4	Principle Biochemistry	Lipids: Definition, Biological functions, Classification	Theoretical and Practical	Quizand Project
5-6	4	Principle Biochemistry	Amino acids and Proteins: Definition, Biological functions. 3- Classification.	Theoretical and Practical	Quizand Project

7	2	Principle Biochemistry	Review and exam		
8-9	4	Principle Biochemistry	Nucleotides and Nucleic acids: Definition, Classification of nitrogenous bases, biological functions of free nucleotides, General structure and differences between DNA and RNA.	Theoretical	Quiz
10	2	Principle Biochemistry	General properties of enzymes: catalytic efficiency, active sites, specificity, cofactor, regulation, location within the cells, Factors affecting reaction velocity, Substrate concentration, Temperature, Ph	Theoretical	Quiz
11	2	Principle Biochemistry	Vitamins: Definition, Classification (Water- and Fat-soluble vitamins), sources, daily requirement, biological function and abnormal, conditions, due to deficiency or toxicity	Theoretical	Quiz
12	2	Principle of Medical physics	Solar energy technology: Availability of solar radiation, Photovoltaic devices, Dye sensitized solar cells, Advantages of Solar Energy, Disadvantages 6- Photo Electrochemical Hydrogen Production	Theoretical	Quiz
13	2	Principle of Medical physics	Nanotechnology in renewable energy system: Nanotechnology enable renewable energy technologies, Energy transport, conversion and storage- Nano, micro and meso scale, phenomena devices	Theoretical	Quiz
14	2	Principle of Medical physics	Nanotechnology to Hydrogen Production: Photocatalytic water splitting reaction, Nano semiconductor materials for photocatalytic water splitting, photolytic H2 Evolution based on Nano enhanced materials	Theoretical	Quiz
15	2		Revision		

7. Course Evaluation

1. Assignments and Class Participation: 10 % of grade
2. Midterm Exams: 30% total (15% each) towards final grade
3. Lab work: 15 %
4. Final Exam: 35 % total towards final grade
5. Lab work: 25 % of final grade

8. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	"IllustratedBiochemistry" *Harper's*
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

43.**Program Vision**
1. Establishing specialized medical laboratories 2. Creating postgraduate studies (master's and doctoral) in pathological analysis specializations 3. Hosting pathological analysis specialists from high rank universities in the world in order to raise the academic level of graduates and enable it to be in the ranks of high education levels colleges and universities.

44.**Program Mission**
The Department of Medical Laboratory Technologies was established in the academic year 2015/2016 to be part of the scientific departments at Al Kut University College. It includes morning and evening studies and follows the annual system, as the duration of study in the department is four years, after which the student will be graduated and holds a bachelor's degree in Pathological analyses technologies. The department includes a number of specialized laboratories that are equipped with the best modern laboratory equipment. It contributes effectively to develop the student's scientific capabilities and it is matchingthe requirements of the theoretical aspect at the level of each academic subject.

45. **Program Objectives**

1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment.
2- The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and being able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria.
3- The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them.
4- The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.
5- The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and perform all partial tests, pathological parameters, and staining for histological sections.
6- The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.
7- Its ability to deal with all modern technologies, including DNA analysis and forensic medicine.

46. **Program Accreditation**

The program is accredited by the Ministry of Higher Education and Scientific Research

47. **Other external influences**

Is there a sponsor for the program?
Quality Assurance Program of the Ministry of Higher Education and Scientific Research.

48. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				

College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

49. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
Fourth Grade	**ML42**	**Diagnostic Microbiology**	**theoretical**	**practical**
			2	**4**

50. Expected learning outcomes of the program

Knowledge	
A1-The ability to apply knowledge in biological and chemical sciences. A2- The ability to complete pathological analysis tasks in a scientific manner based on basic science	Theoretical, practical, applied lectures, daily assignments, and discussions
Skills	
B1 - The ability to prepare and carry out experimentsLaboratory, in addition to interpretation and analysis results and preparing the final report.	Theoretical, practical, applied lectures, daily assignments, and discussions
B2 - The ability to diagnose pathological injuries through laboratory work, to achieve the desired goal practically in the medical fields	Theoretical, practical, applied lectures, daily assignments, and discussions
Ethics	
C1- The ability to use modern technologies, skills, and tools necessary to practice diagnosis, patients depending on laboratory work mechanisms. C 2- Realizing the moral responsibility to give the most accurate results	Theoretical, practical, applied lectures, daily assignments, and discussions
D - General and transferable skills (to other skillsrelated to employability and personal development). D1- The ability to work within a team that includes all medical and health specialties. D2- The ability to develop oneself and work in the field	Theoretical, practical, applied lectures, daily assignments, and discussions Exams, assignments, daily assignments, discussions, laboratory reports, and a graduation project

51. Teaching and Learning Strategies

Theoretical, practical, applied lectures, daily assignments, and discussions

52. Evaluation methods

Exams, assignments, daily assignments, discussions, laboratory reports, and a graduation project

53.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Lecturer-PhD	Biotechnology	Molecular Biology			1	
Assist. Lecturer-MSc	Microbiology	Microbiology				1

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

54.Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)
Central admission to the Ministry of Higher Education and Scientific Research

55.The most important sources of information about the program

Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research.

56.Program Development Plan

Extracurricular activity

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Fourth Grade	ML42	Diagnostic Microbiology	Basic	X	X			X	X			X	X		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

43. Course Name:	
Diagnostic Microbiology	
44. Course Code:	
ML42	
45. Semester / Year:	
1st and 2nd of Fourth Year	
46. Description Preparation Date:	
1-1-2024	
47. Available Attendance Forms:	
Normal attending in the class	
48. Number of Credit Hours (Total) / Number of Units (Total)	
4 hours practical application and 2 hours for theoretical studying	
49. Course administrator's name (mention all, if more than one name)	
Name: Arkan Hasan Frayyeh, PhD Email:arkanhf@yahoo.com	
50. Course Objectives	
Course Objectiv	The student will gain knowledge about diagnostic bacteria in terms of: - Identify the shapes and types of bacteria under the microscope, and take samples from the infected person and culture them for the purpose of diagnosing the type of bacteria and identifying the disease causing it in order to prescribe the appropriate treatment as well knowing its transmission and epidemiological methods for the purpose of avoiding its spread and knowing ways of prevention
51. Teaching and Learning Strategies	
Strategy	A1- The ability to identify most types of bacteria that cause disease and those that do not cause disease as well. B - Skills related to diagnostic bacteria B1- The ability to understand how infection occurs transmitted. B2 - The ability to understand the basic steps for the purpose of diagnosing bacterial infection and how to isolate it from patient to be diagnosed in the aim of prescribing appropriate treatment C - Thinking skills. C 1 - The ability to think about all the possibilities or circumstances that help bacteria cause disease. C2 - Developing the student's ability to deal with information as a solution method. D- General and transferable skills (other skills related to employability and

	personal development)

52. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
				Method of giving lectures. - Self-learning, discussion sessions. - Show explanatory videos. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments.	Participation in the classroom. - Providing various activities. - Not less than four semester written tests during the academic year, in addition to the final exam Theoretical and practical. - Assignments and reports to solve questions in the form of extracurricular activities

53. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

54. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic lectures and textbook
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	1- Lapage SP(1976). Biochemical Tests for Identification of Medical Bacteria. *J Clin Pathol*. 2-Murray, P. R., Rosenthal, K. S., & Pfaller, M. A. (2020). *Medical Microbiology E-Book*. Elsevier Health Sciences. 3-Ryan, K. J., & Ray, C. G. (2004). Medical microbiology. *McGraw Hill*

Week s	Subject				
1	**Diagnostic Microbiology: purpose and philosophy**	DiagnosticMicrobiology: purpose and philosophy			
2	**Laboratory safety**	Generalsafety considerations			
		Biohazards and practices specifictomicrobiologyin general	-Biologicalsafety cabinet		
			-Protective clothing		
			-Decontamination		
			-Personalpractice		
		Classificationof biological agentsonthebasisof hazard	-Specific agents		
		Specialprecautionsfor specificareasofclinical microbiology	-Microbiology		
			-Virology		
			-Mycology		
			-Parasitology		
			-Serology		
3	**-Managing the clinical microbiology laboratory: effective**	-Managingtheclinical microbiology laboratory effectivepatientcarei na cost	-Education		
			-Limitation on testing		
			-Strategies for choosingmethods		
	patientcarein a cost	Rapiddetectionof infectious agents	-Visualtest		
			-Agglutination methods		
			-Automation	-VITIC2	
				-ELISA	
				-RIA	
				-HPLC	
				-PCR	
			-Otherstrategies		

		-Decreasinganalysistime foridentificationresults	-Noncommercial methods		
			-Commercial methods		
4	**-Selection, collection,and transport of specimens for microbiologic alexamination**	-Selection,collection,and transportofspecimens for microbiological examination			
			-Anaerobic collection procedures		
			-Anaerobic specimen transport		
5	**-Optical methodsfor laboratory diagnosisof infectious diseases**	Examinationoffresh material	-Direct examination of clinicalspecimens		
			-Slightlymodified directpreparations of clinical materials		
		-Opticalmethodsfor laboratorydiagnosisof infectious diseases	-Preparationofa smear		
			-Gramstain		
			-Acid-faststain		
			-Differential stains for parasites		
			-Differential stains for blood smear and tissue sections		
			-Fungalstains		
			-Acridineorange		
			-Rhodamine-auramine		
6	**-Cultivation andisolation of viable**	-Preparation and characteristicsofcertain frequently used media	-Blood agar, Chocolate agar….etc		
	pathogens				
7-8	**Microbiologic almethodsfor identification of**	Basic approaches to identificationofpathogens	-Colonial morphology		
			-Gramstain		

	microorganisms	Rapidbiochemicaltests	Catalase,oxidase, coagulase, spot indole, bile solubility,…etc.		
		Conventionalbiochemical tests	-Methyl red, sugar fermentation, urease production, …etc.		
		Modificationof conventionalbiochemical test	SuchasAPI20E		
9-10	**- Nontraditional methods for identification of pathogens or their products**	Particleagglutination, ELISA, PCR, ……..etc.	Important properties -Laboratory diagnosis		
11	**-Antibiotic susceptibility tests**	Discdiffusion method			
		MIC			
		VITC			
12-13	**Methodsfor identification of etiological agents of infectious disease**	-Staphylococci -Streptococci -Neisseria -Enterobacteriaceae -Pseudomonas -Other bacteria			
14-15	**Diagnosisby organsystem Bloodstream infections**	General considerations	causes	Bacteria, fungi, parasites andviruses	
			Type of bacteremia		
			Type of blood stream infections	Intravascular infections	
				Extravascular infections	
		Detectionof bacteremia	-Specimen collection	-Preparation of the site	
				-Specimen volume	
				-Timing of collection	
				Miscellaneou matters	Anticoagulation
					-Dilution

					-Blood culture media and additives
			-Culture techniques	Conventional blood culture	-Incubation conditionsand detecting growth
			Handlingpositive blood culture		
		Specialproblemsand unusualmicroorganisms	-Fungi, Mycobacteria, Brucella,…etc	.	
16-17	**Meningitis and other infectionsof the central nervous system**	General considerations	Anatomy		
			-Routesofinfections		
			-Diseases of the Centralnervous system	-Meningitis	
				-Encephalitis	
				-Brain abscess	
		Laboratorydiagnosis Meningitis	-Specimen collection and transport		
			-CSFfindings	Leukocytes, proteinand glucose	
			-Visualdetection of etiological agents	-Staining	
				-Wet preparation	
			-Direct detection of etiological agents	-Serology	
				-Molecular methods	
			-Culture		
18-19	**Infectionof the respiratory tract**	General consideration, anatomyandnormalstate ofrespiratory tract			
		-Floraofrespiratorytract			
		-pathogenicmechanisms used by agents			
		-Upperrespiratorytract	-Etiological agents		
			-Collectionand transport- of		

			specimens		
			-Direct visual examination		
			-Culture		
			Nonclture methods	PCR, RIA	
20-21	**Infectionof theurinary tract**	-Generalconsiderations	-Anatomy		
			-Resident microorganismsof the urinary tract		
		-Infectionoftheurinary tract	-Etiological agents		
		-Pathogenesis	-Routes of infection		
			-Thehost-parasite relationship		
		-Typeof infection	Urethritis, cystitis, pyelonephritis		
		-Laboratorydiagnosis	-Specimen collection	-Clean-catch midstream urine	
				-Straight catheterized urine	
				-Bladder aspiration	
				-Indwelling catheter	
			-Specimen transport		
			-Screening procedures	-Gramstain	
				-Indirect indices -Automated	Nitrate reductase, leukocyte esterase, catalasetests
				System -General urine examination	
			Urine culture	-Inoculation and	

				incubation	
				- Interpretatio	
				nofurine culture	
22	**Genitaltract infections**		-Anatomy		
			-Resident microbialflora		
			-Sexually transmitted diseasesandother genital tract infections		
		Genitaltractinfections	Etiological agents		
			-Routes transmission		
			-Clinical manifestations	Asymptomatic	
				-Dysuria	
				-Urethral discharge	
				-Lesionsof the skin and mucous membranes	
				-Vaginitis	
				-Cervicitis	
				-Other infections	
			-Lower genital tractinfections	-Urethritis, cervicitis and vaginitis	-Specimen collection
					-Direct microscopic examination
					-Culture -Nonclture
					Methods
23-24	**Gastrointestinal tract infections**	-Generalconsiderations	-Anatomy		
			-Resident microbialflora		
		-Gastroenteritis	-Pathogenesis	-Host factors	

				-Microbial factors	-Primary pathogenic mechanisms
					-Toxins
					-Attachment
					Invasion
			Etiological agents		
		-Laboratorydiagnosisof gastrointestinal tract	Specimen collection	General comments	
		infections	transport	-Stool specimens for bacteriological culture	
				-Stool specimens forovaand parasites	
				-Stool specimens for viruses	
			Direct detection of agents	-Wet mounts -Stains -Antigen detection -Molecular techniques	
			-Laboratory diagnosis		
25	**Infections of theeyes,ears and sinuses**	-Anatomy			
		--Residentmicrobialflora			
			-Specimen collection		
			-Direct visual examination		
			-Culture		
			-Nonculture methods		
26	**Skin,Soft tissueand wound infections**	-Generalconsiderations			
		-Laboratorydiagnosis procedures	-Gramstain		
			-Culture		

27	**Normalsterile body fluids, bone andbone marrow and solid tissue**	-Specimensfromsterile body sites	-Fluids	-Pleural fluid	
				-Peritoneal fluid	
				-Pericardial fluid	
				-Jointfluid	
			-Bone	Bone marrow aspiration or biopsy	
		-Laboratorydiagnosis	Specimen	-Direct	

			collection and transport	examination -Culture	
28	**-Laboratory methods diagnosis parasitic infections**	-Specimencollectionand transport -Specimenprocessing -Microscopic examination			
29	**-Laboratory methods in basic mycology**	Collection,andtransportof clinical specimens	-Direct microscopic examination -Culture		
30	**-Laboratory methods in basicvirology**	Specimenselectionand collection -Specimen transport and storage -Specimenprocessing			
		Virusdetection methods	-Cytology and histology		
			-Electron microscopy		
			Immunodiagnosis (antigen detection)		
			-Molecular detection		
			-Cellculture		
			-Serology (antibody detection)		

57.**Program Vision**

- Establishing specialized medical laboratories

• Creating postgraduate studies (master's and doctorate) in pathological analysis specializations
• Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

58.**Program Mission**

The program mission is written here as stated in the university's catalog and website.

59.**Program Objectives**

1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment.

2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria.

3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them.

4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.

5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections.

6 - The graduate should be able to deal with what happens with blood transfusion

and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.

7 - Its ability to deal with all modern technologies, including DNA analysis and forensic medicine

60. **Program Accreditation**

Does the program have program accreditation? And from which agency?

61. **Other external influences**

Quality Assurance Program of the Ministry of Higher Education and Scientific Research

62. **Program Structure**

Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

63. Program Description

Credit Hours		Course Name	Course Code	**Year/Level**
practical	theoretical			
4	2	GeneralChemistry	**ML11**	First-year
4	2	Anatomy&MedicalTerminology	**ML12**	
4	2	Humanbiology	**ML13**	
3	1	Lab.Instrumentation	**ML14**	
--	2	MedicalEthics	**ML15**	
2	1	ComputerApplication	**ML16**	

--	1	Humanrights	**ML17**	
	1	EnglishLanguage	**ML18**	
4	2	MedicalMicrobiology	**ML21**	Second Year
4	2	ClinicalBiochemistry	**ML22**	
2	2	Humanphysiology	**ML23**	
2	2	Histology	**ML24**	
4	2	MolecularBiology	**ML25**	
4	2	Medicalparasitology	**ML26**	
	1	EnglishLanguage	**ML27**	
3	2	Histopathology	**ML31**	Third year
3	2	Hematology	**ML32**	
2	2	Virology& Mycology	**ML33**	
2	2	ClinicalChemistry	**ML34**	
3	2	Cytogenetic	**ML35**	
2	2	Immunology	**ML36**	
2	2	Advancedlaboratorytechnique	**ML37**	
2	1	ComputerApplication	**ML38**	
	1	EnglishLanguage	**ML39**	
4	2	ClinicalImmunology	**ML41**	Four year
4	2	DiagnosticMicrobiology	**ML42**	
4	2	AdvanceClinicalbiochemistry	**ML43**	
4	2	Parasitology	**ML44**	
4	2	Bloodtransfusion	**ML45**	
2	3	Histopathology	**ML46**	
	1	LaboratoryManagement	**ML47**	
	1	EnglishLanguage	**ML48**	
2	1	Biostatic	**ML49**	
5		Project	**ML410**	

64. Expected learning outcomes of the program

Knowledge	
Knowledge and understanding The ability to apply knowledge of anatomy and identify different parts of the body	
Skills	
Developing the student's ability to think and extract information from books, lectures, and laboratories	

General and transferable skills (other skills related to employability and personal development.)	
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

65. Teaching and Learning Strategies

Method of giving lectures.
- Self-learning, discussion panels.
- Exercises and activities in the classroom, focusing on the practical and laboratory aspects.
- Directing students to some websites to benefit from them to develop their capabilities

66. Evaluation methods

- Participation in the classroom.
- Providing various activities.
- Not less than four semester written exams during the academic year, in addition to the theoretical final exam
And practical.
- Assignments and reports to solve questions in the form of extracurricular activities

67. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members
Briefly describe the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty

such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

68. Acceptance Criterion

Central admission to the Ministry of Higher Education and Scientific Research)

69. The most important sources of information about the program

Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

70. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

55.Course Name:
Anatomy
56.Course Code:
Anatomy and Termnology
57.Semester / Year:
Second semester/2024
58.Description Preparation Date:
16\4\2024
59.Available Attendance Forms:
Official working hours
60.Number of Credit Hours (Total) / Number of Units (Total)
Number of hours (6) / Number of units (4)
61. Course administrator's name (mention all, if more than one name)
Name: M.Sc. Ali Majid Attei M.Sc. Mohammed Talal Jafer Email:
62.Course Objectives

Course Objectives	**Anatomy and medical terminology aims provide the student with knowledge of med terminology and the components of med terminology, and to demonstrate the importa of communicating through medical terminolo as well as knowledge of anatomy, body parts, a cavities, as well as identifying the functions different body parts.**

63.Teaching and Learning Strategies

Strategy	- Self-learning, discussion panels. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments

64. Course Structure

Week	Subject
1	Introduction to anatomy and human body
2	Level of organization
3	Anatomical positions
4	Body regions and cavities
5	Body planes and sections
6	Directional terms
7	Tissues and membranes
8	Upper limb
9	Lower limb
10	Thorax
11	Abdomen
12	Pelvis
13	Head and neck
14	Musculoskeletal system: Bones, joints and muscles
15	Digestive system I: Digestive tract
16	Digestive system II: Accessories and glands
17	Cardiovascular system: heart and blood vessels
18	Lymphatic system
19	Respiratory system
20	Nervous system I: Central nervous system: brain and spinal cord
21	Nervous system II: Peripheral nervous system and cranial nerves
22	Nervous system III: Autonomic nervous system
23	Special senses
24	Endocrine system
25	Urinary system
26	Reproductive system
27	Gynecology, pregnancy, and childbirth
28	Embryology
29	Childhood, growth and development

65.Course Evaluation

Participation in the classroom.
Providing various activities.
- Not less than four written semester exams during the academic year, in addition to the theoretical final exam
And practical.
- Assignments and reports to solve questions in the form of extracurricular activities.

66.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

71.**Program Vision**
Program vision is written here as stated in the university's catalogue and website.

72.**Program Mission**
Program mission is written here as stated in the university's catalogue and website.

73. **Program Objectives**
General statements describing what the program or institution intends to achieve.

74. **Program Accreditation**
Does the program have program accreditation? And from which agency?

75. **Other external influences**
Is there a sponsor for the program?

76. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

77. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

78. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

79. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

80. Evaluation methods

Implemented at all stages of the program in general.

81. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

82. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

83. The most important sources of information about the program

State briefly the sources of information about the program.

84. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

67. Course Name:
Computer Applications
68. Course Code:
ML16
69. Semester / Year:
The first and second for the initial academic year
70. Description Preparation Date:
31-1-2024
71. Available Attendance Forms:
72. Number of Credit Hours (Total) / Number of Units (Total)
1 theoretical hour plus 2 practical hours
73. Course administrator's name (mention all, if more than one name)
Name: MSC. Ali Kareem Abed Email:alikareemit9@gmail.com Name : MSC. Zaniab Hameed Kadhim
74. Course Objectives

Course Objectives	Providing students with computer knowledge, including understanding its components, different types of operating systems, and various applications, as well as office software

75. Teaching and Learning Strategies

Strategy	

76. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1 + 2 + 3	6	• Introduction to computer devices • Computer components • Input and output devices • Types of memory	Computer's components	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
4 + 5 + 6 + 7 + 8	10	• Computer operating systems Comprehensive understanding of As well as Fundamentals of operating systems All types of computers OS Its goals and categorization As well as the structure Fundamental functioning dos with its commands Internal and external And pertaining to administration Files and directories	Operating System	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

9 +10 +11	6	Installation Requirements Windows 7 • Desktop components • Taskbar icons • Desktop background • Control Panel	Windows 7	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
12 + 13 + 14	6	• Introduction to using the Microsoft Word program • Interface components of the program • File tab • Insert tab • Page tab • Main • Design tab	**Microsoft office word 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
15 + 16+ 17	6	• Review the language checking tab and comments, along with other program features.	**Microsoft office word 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

18 + 19 + 20 + 21 + 22	10	• Introduction to Microsoft Excel • Interface components of the program File tab Insert tab Page tab Main Data tab • Mathematical functions in Excel Program • Statistical functions in Excel program	**Microsoft office excel 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports
23 + 24 + 24 + 26 + 27	10	Introduction to Microsoft PowerPoint • Interface components of the program • File tab • Home Tab • Insert tab • Design Tab	**Microsoft Office PowerPoint 2010**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

28 + 29 + 30	6	**Internet and electronic mail**	**Internet and electronic mail**	Theoretical scientific lectures and scientific/interactive media presentations	according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports

77.Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

78.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

85.**Program Vision**
Vision Statement:

Elevating Healthcare through Excellence in General Chemistry Education

Overview:

The Department of Medical Laboratory Techniques envisions a General Chemistry program that serves as the cornerstone for producing skilled and knowledgeable laboratory professionals committed to advancing healthcare. Our vision is to provide a transformative educational experience that seamlessly integrates the principles of General Chemistry into the specialized context of medical laboratories. Through innovation, collaboration, and a steadfast commitment to excellence, we aim to nurture a cadre of laboratory professionals who contribute significantly to the improvement of healthcare outcomes.

Core Principles:

6. *Integration of Chemistry in Healthcare: We envision a program that seamlessly weaves the principles of General Chemistry into the fabric of medical laboratory practices. Our students will develop a profound understanding of the chemical foundations underpinning diagnostic and analytical processes critical to healthcare.*
7. *Cutting-edge Technology and Techniques: Embracing technological advancements, our program is committed to providing students with hands-on experience in state-of-the-art laboratories. We aim to expose students to the latest analytical techniques, instrumentation, and methodologies relevant to the evolving landscape of medical laboratory science.*
8. *Interdisciplinary Collaboration: Recognizing the interconnected nature of healthcare, we foster a collaborative learning environment. Our program encourages interdisciplinary interactions between students and professionals from various healthcare disciplines to simulate real-world scenarios and promote a holistic approach to patient care.*
9. *Ethical Practice and Quality Assurance: We instill a strong commitment to ethical conduct and quality assurance in our students. Our vision is to produce laboratory professionals who adhere to the highest standards of integrity, ensuring the accuracy and reliability of laboratory results crucial to patient diagnosis and treatment.*
10. *Professional Development and Lifelong Learning: Our program is dedicated to producing graduates who are not only well-prepared for immediate entry into the workforce but are also equipped with a mindset for continuous learning and professional development. We envision our alumni as lifelong learners who stay abreast of emerging trends in both General Chemistry and medical laboratory sciences.*

Outcome:

Upon completion of the General Chemistry program in the Department of Medical Laboratory Techniques, our graduates will emerge as highly skilled and ethical laboratory professionals. Equipped with a solid foundation in General Chemistry, specialized knowledge in medical laboratory techniques, and a commitment to excellence, our alumni will play a crucial role in advancing healthcare outcomes, contributing to disease diagnosis, treatment, and prevention.

This vision statement aligns the General Chemistry program with the specific needs and goals of the Department of Medical Laboratory Techniques, emphasizing the integration of chemistry into the context of healthcare and the development of professionals who contribute meaningfully to

the field.

86. **Program Mission**

Mission Statement:
Preparing Future Healthcare Leaders through Comprehensive General Chemistry Education
Objectives:
Educational Excellence: Deliver a rigorous General Chemistry curriculum for a solid understanding of chemical principles in medical laboratory sciences.
Hands-On Learning: Provide practical, hands-on experiences in state-of-the-art laboratories to bridge theory with application.
Interdisciplinary Integration: Seamlessly integrate General Chemistry with other medical laboratory disciplines, fostering collaboration skills.
Ethical Practice: Instill a strong sense of ethics, integrity, and responsibility in laboratory practices.
Research and Innovation: Cultivate a culture of curiosity, encouraging research in General Chemistry applications for healthcare improvement.
Global Awareness: Foster global awareness and cultural competence in healthcare practices for versatile and adaptable professionals.
Impact:
Graduates will excel in applying General Chemistry concepts, demonstrating critical thinking, ethical conduct, and innovative solutions to elevate healthcare standards and improve patient outcomes.

87. **Program Objectives**

Program Objectives:

- Conceptual Mastery: Attain a profound understanding of General Chemistry principles for effective problem-solving.
- Laboratory Proficiency: Develop strong practical skills in laboratory techniques.
- Interdisciplinary Integration: Seamlessly integrate General Chemistry with other medical laboratory disciplines.
- Ethical Professionalism: Instill values of ethics and professionalism, emphasizing responsible laboratory practices.
- Research and Innovation: Encourage research and innovation in applying General Chemistry to healthcare.
- Global Awareness: Increase global awareness and foster cultural competence among students.
- Professional Certification Readiness: Prepare students for relevant certifications in medical laboratory sciences.
- Continuous Learning: Cultivate a mindset of continuous learning and professional adaptation to emerging trends.

- Communication Skills: Enhance effective written and oral communication skills.
- Community Engagement: Encourage active participation in community service, showcasing the positive impact of General Chemistry in healthcare.

88. Program Accreditation

Does the program have program accreditation? And from which agency?

89. Other external influences

The Quality Assurance Program for the Ministry of Higher Education and Scientific Research.

90. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**2 Semester**	**8**	**19%**	**Basic courses in general studies.**
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

91. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First Year		**General Chemistry 1 & 2**	**2**	**5**

92. Expected learning outcomes of the program

Knowledge	
Analytical Chemistry Learning Outcomes:	6. **Precision in Techniques:** Demonstrate precision in analyzing substances with various techniques. 7. **Instrumentation Proficiency:** Proficiently operate and maintain analytical instruments. 8. **Data Analysis Skills:** Analyze and interpret complex analytical data accurately. 9. **Quality Assurance Practices:** Implement quality assurance practices for reliable results.

Organic Chemistry Learning Outcomes: Cross-Cutting Learning Outcomes:	10. **Problem-Solving Ability:** Develop problem-solving skills for troubleshooting issues. 6. **Understanding Organic Compounds:** Understand the structure, properties, and reactions of relevant organic compounds. 7. **Chemical Synthesis Competence:** Acquire competence in chemical synthesis techniques. 8. **Functional Group Recognition:** Identify functional groups within organic molecules. 9. **Safety Protocols:** Implement safety protocols when working with organic chemicals. 10. **Integration with Clinical Applications:** Integrate organic chemistry principles with clinical applications. 4. **Interdisciplinary Collaboration:** Collaborate with professionals from various medical laboratory disciplines. 5. **Effective Communication:** Develop effective communication skills for conveying findings. 6. **Ethical Conduct:** Embrace ethical conduct in laboratory practices.
Skills	
Learning Outcomes 2	1.**Lab Techniques Proficiency:** Attain proficiency in essential medical lab techniques. 2.**Critical Thinking:** Develop strong problem-solving skills. 3.**Data Collection and Analysis:** Acquire accurate data analysis skills. 4.**Instrumentation Operation:** Demonstrate competence in using diverse lab instruments. 5.**Communication Skills:** Enhance effective written and oral communication. 6.**Team Collaboration:** Collaborate effectively in interdisciplinary teams. 7.**Safety Practices:** Adhere rigorously to strict safety protocols. 8.**Quality Assurance:** Implement measures for result quality and accuracy. 9.**Research Competence:** Develop research skills for lab sciences. 10.**Adaptability:** Cultivate adaptability and commitment to continuous learning. 11.**Ethical Conduct:** Demonstrate unwavering ethical and professional conduct. 12.**Time Management:** Master effective time management.
Ethics	
Learning Outcomes 3	1.**Ethical Awareness:** Develop heightened awareness of ethical considerations. 2.**Moral Reasoning:** Enhance skills in moral reasoning for complex dilemmas. 3.**Professional Integrity:** Cultivate commitment to professional integrity. 4.**Confidentiality Practices:** Adhere to strict confidentiality for sensitive information. 5.**Respect for Diversity:** Demonstrate respect for diversity in all contexts.

	6.**Informed Decision-Making:** Make informed decisions considering ethical implications. 7.**Accountability:** Embrace accountability for ethical consequences. 8.**Ethical Communication:** Develop effective communication for ethical concerns. 9.**Ethical Leadership:** Foster qualities of ethical leadership. 10.**Continuous Ethical Education:** Commit to ongoing education on ethical standards and challenges.

93.Teaching and Learning Strategies

1.**Active Learning:** Engage students through active participation and collaboration.
2.**Interactive Lectures:** Conduct interactive lectures for enhanced student involvement.
3.P**ractical Demonstrations:** Provide hands-on demonstrations to reinforce theoretical concepts.
4.**Case-Based Learning:** Apply theoretical knowledge to real-world scenarios through case-based learning.
5.**Group Discussions:** Promote critical thinking through group discussions.
6.**Technology Integration:** Enhance learning experiences with technology tools and platforms.
7.**Peer Teaching:** Foster teamwork and communication skills through peer teaching.
8.**Assessment Diversity:** Use various assessments to accommodate diverse learning styles.
9.**Feedback Mechanisms:** Provide constructive feedback and support student improvement.
10.**Inclusive Teaching:** Implement practices to cater to diverse student backgrounds and needs.
These strategies create a dynamic and inclusive learning environment, promoting engagement and knowledge application.

94. Evaluation methods

1.**Formative Assessment:** Ongoing assessments for feedback during the learning process.
2.**Summative Assessment:** Comprehensive evaluations at the end of learning periods.
3.**Continuous Evaluation:** Assessment throughout tasks and assignments.
4.**Practical Examinations:** Hands-on assessments for practical skills.
These methods offer a comprehensive evaluation of understanding, skills, and practical application in diverse learning scenarios.

95.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Dr. Ghassan	Chemistr	Analytical			10	

Mahmoud Ibrahim	y	Chemistry				
Dr. Aoras Ameen Kadhime	Chemistry	Organic Chemistry			10	
M.Sc. Mohammed Bahaa Mohsin	Chemistry	Biochemistry			10	

Professional Development

Mentoring new faculty members

1.**Orientation:** Comprehensive sessions on policies and academic culture.
2.**Assigned Mentors:** Experienced mentors guide new faculty on teaching, research, and institutional dynamics.
3.**Professional Development:** Access to workshops and conferences for skill enhancement.
4.**Resource Sharing:** Platforms for sharing teaching and research materials.
5.**Performance Evaluation Support:** Guidance on goal-setting and career advancement.
This streamlined process aims to integrate faculty effectively, fostering professional growth and contributing to institutional success.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

96.Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

97.The most important sources of information about the program

State briefly the sources of information about the program.

98.Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Cours Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Year 1		General Chemistry 1	Basic	X	X	X	X	X	X	X	X	X	X		
		General Chemistry 2	Basic	X	X	X	X	X	X	X	X	X	X		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation**

Course Description Form

79. Course Name:
General Chemistry 1
80. Course Code:
81. Semester / Year:
Semester 1/ Year 1
82. Description Preparation Date:
1/1/2023
83. Available Attendance Forms:
In-person
84. Number of Credit Hours (Total) / Number of Units (Total)
Credit Hours (7) / Number of Units (4)
85. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Ghassan Mahmoud Ibrahim Email:*gibrahim00@yahoo.com* Name: Dr. Aoras Ameen Kadhime Email:*schuttberg@yahoo.com* Name: M.Sc. Mohammed Bahaa Mohsin Email:*mohammedbahaa783@gmail.com*
86. Course Objectives

Course Objectives	• **Foundation: Build a solid understanding of general chemistry principles for analytical lab applications.** • **Proficiency: Develop skills in utilizing analytical techniques for effective data analysis in the lab.** • **Critical Thinking: Foster critical thinking for applying theoretical concepts in practical analytical scenarios.**

87. Teaching and Learning Strategies

Strategy	**4. Active Learning: Engage students through participation, discussions, and practical experiences for a dynamic learning environment.** **5. Technology Integration: Use multimedia and interactive tools to enhance learning experiences and accommodate diverse learning styles.** **6. Assessment Diversity: Employ various assessment methods, including projects and Homework, to comprehensively evaluate student understanding.**

9.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2	General Chemistry	Introduction to chemistry (matter, structure of atom, periodic table, isotopes, atomic number, mass number, composition of matter, types of bonds)	Theoretical and Practical	Quizand Project calculation
2	2	Analytical chemistry	Methods of analysis, Types of Solution, preparation of standard solution unit, concentration, percentage.	Theoretical and Practical	Quizand Project
3	2	Analytical chemistry	Molar solution, Normal solution, parts per million	Theoretical and Practical	Quizand Project
4	2	Analytical chemistry	Acid base theory, types of Chemical reactions, PH, neutralization reaction	Theoretical and Practical	Quizand Project
5	2	Analytical chemistry	Periodic table, equilibrium constant,buffer solution Acid-base titration, oxidation -reduction reaction	Theoretical and Practical	Quizand Project
6	2	Analytical chemistry	Acid-base titration, oxidation -reduction reaction	Theoretical and Practical	Quizand Project
7	2	Analytical chemistry	Spectroscopy (Optical spectroscopy, Beer's lambert law)	Theoretical	Quiz
8	2		Review and exam		
9 10	4	Organic chemistry	Structure of carbon compounds (alkanes, alkenes, alkynes, halogen compound)	Theoretical and Practical	Quizand Project
11	2	Organic chemistry	Alcohols, classification, properties, reaction,	Theoretical and Practical	Quizand Project
12	2	Organic chemistry	Aldehydes and ketones properties reaction	Theoretical and Practical	Quizand Project
13 14	4	Organic chemistry	Carboxylic acid, Aromatic, Hydrocarbon	Theoretical and Practical	Quizand Project
15	2	Organic chemistry	Amines, properties, chemical reaction	Theoretical and Practical	Quizand Project

11. Course Evaluation

6. Assignments and Class Participation: 10 % of grade
7. Midterm Exams: 30% total (15% each) towards final grade
8. Lab work: 15 %
9. Final Exam: 35 % total towards final grade
10. Lab work: 25 % of final grade

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	"Fundamentals of Analytical Chemistry" *F. JAMES HOLLER STANLEY R. CROUCH* "Organic Chemistry", *Morrison& Boyd*
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

88.Course Name:
General Chemistry 2
89.Course Code:

90.Semester / Year:
Semester 2/ Year 1
91.Description Preparation Date:
1/1/2023
92.Available Attendance Forms:
In-person
93.Number of Credit Hours (Total) / Number of Units (Total)
Credit Hours (7) / Number of Units (4)
94. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Ghassan Mahmoud Ibrahim Email:*gibrahim00@yahoo.com* Name: Dr. Aoras Ameen Kadhime Email:*schuttberg@yahoo.com* Name: M.Sc. Mohammed Bahaa Mohsin Email:*mohammedbahaa783@gmail.com*
95.Course Objectives

Course Objectives	• **Foundational Knowledge: Build a solid understanding of biochemistry principles in the medical laboratory context.** • **Clinical Application: Apply biochemistry concepts for practical use in clinical settings.** • **Laboratory Skills: Develop proficiency in biochemical techniques for effective medical laboratory work.**
96.Teaching and Learning Strategies	
Strategy	**4. Integrated Learning: Integrate biochemistry principles with practical applications tailored to medical laboratory sciences.** **5. Hands-On Experience: Prioritize practical, hands-on experiences in the laboratory to reinforce theoretical concepts.** **6. Clinical Connection: Emphasize the clinical relevance of biochemistry, linking theoretical knowledge to medical diagnosis and treatment in the laboratory.**

13.

14. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4	Principle Biochemistry	Carbohydrates: Definition, Biological functions, Classification.	Theoretical and Practical	Quizand Project calculation
3-4	4	Principle Biochemistry	Lipids: Definition, Biological functions, Classification	Theoretical and Practical	Quizand Project
5-6	4	Principle Biochemistry	Amino acids and Proteins: Definition, Biological functions. 3- Classification.	Theoretical and Practical	Quizand Project

7	2	Principle Biochemistry	Review and exam		
8-9	4	Principle Biochemistry	Nucleotides and Nucleic acids: Definition, Classification of nitrogenous bases, biological functions of free nucleotides, General structure and differences between DNA and RNA.	Theoretical	Quiz
10	2	Principle Biochemistry	General properties of enzymes: catalytic efficiency, active sites, specificity, cofactor, regulation, location within the cells, Factors affecting reaction velocity, Substrate concentration, Temperature, Ph	Theoretical	Quiz
11	2	Principle Biochemistry	Vitamins: Definition, Classification (Water- and Fat-soluble vitamins), sources, daily requirement, biological function and abnormal, conditions, due to deficiency or toxicity	Theoretical	Quiz
12	2	Principle of Medical physics	Solar energy technology: Availability of solar radiation, Photovoltaic devices, Dye sensitized solar cells, Advantages of Solar Energy, Disadvantages 6- Photo Electrochemical Hydrogen Production	Theoretical	Quiz
13	2	Principle of Medical physics	Nanotechnology in renewable energy system: Nanotechnology enable renewable energy technologies, Energy transport, conversion and storage- Nano, micro and meso scale, phenomena devices	Theoretical	Quiz
14	2	Principle of Medical physics	Nanotechnology to Hydrogen Production: Photocatalytic water splitting reaction, Nano semiconductor materials for photocatalytic water splitting, photolytic H2 Evolution based on Nano enhanced materials	Theoretical	Quiz
15	2		Revision		

15. Course Evaluation

6. Assignments and Class Participation: 10 % of grade
7. Midterm Exams: 30% total (15% each) towards final grade
8. Lab work: 15 %
9. Final Exam: 35 % total towards final grade
10. Lab work: 25 % of final grade

16. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	"IllustratedBiochemistry" *Harper's*
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

99. **Program Vision**
• Establishing specialized medical laboratories • Creating postgraduate studies (master's and doctorate) in pathological analysis specializations • Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

100. **Program Mission**
Program mission is written here as stated in the university's catalogue and website.

101. **Program Objectives**
1- The graduate must be proficient in the process of drawing blood, dealing with all laboratory samples, collecting them and transporting them, and being able to deal with all laboratory equipment. 2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria. 3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them. 4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others. 5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections. 6 - The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology. 7 - Its ability to deal with all modern technologies, including DNA analysis and forensic medicine

102. **Program Accreditation**
Does the program have program accreditation? And from which agency?

103. **Other external influences**
Is there a sponsor for the program?

104. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

105. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

106. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

107. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

108. Evaluation methods

Implemented at all stages of the program in general.

109. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

110. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

111. The most important sources of information about the program

State briefly the sources of information about the program.

112. Program Development Plan

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

97.Course Name:
Histopathology
98.Course Code:
99.Semester / Year:
Second \ 2024
100. Description Preparation Date:
31\1\2014
101. Available Attendance Forms:
Official working
102. Number of Credit Hours (Total) / Number of Units (Total)
N .of hours (6) \ N .of hours (4)
103. Course administrator's name (mention all, if more than one name)
Name: M.Sc. Moitaba Qati Dahdoh M.Sc. Aqeel Malik Email:Doplabio@gmail.com
104. Course Objectives

Course Objectives	Histopathology aims to introduce the student to the various body systems and methods of preparing tissue sections This is so that the student becomes familiar at the end of the academic year with the various components of the body, as well as the knowledge of identifying and diagnosing diseases by studying tissue sections,

	as well as the types of methods used, different materials and dyes, and the stages of passage of the tissue sample until it is diagnosed.

105. Teaching and Learning Strategies

Strategy	- Explaining the subject's vocabulary in detail and clarifying its practical aspect. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments. - Using discussion circles as well as some explanatory videos related to the study topics - Showing microscopic slides t include various tissue sections.

106. Course Structure

Week	Subject
1	Introduction, cell constituents
2	Inflammation, Repair & Degeneration Acute Inflammation
3	Chronic Inflammation
4	Repair, healing & Regeneration
5	Rettrograde, changes, Degeneration
6-7	Atropphy Necrosis, cloudy swelling
8	Gangrene
9	Criteria used for cytopathological diagnosis of cancer
10-11	Changes in the cytoplasma in malignancy Changes in the nucleus in malignancy
12	Changes in cell as a general in malignancy
13	Numenclature of tumors
14-15	Classification of tumors

	الفصل الثاني
1	Fixation & Fixatives Theoretical aspects of Fixation
2	Fixation for special substances Specializes Techniques for individual tissue & fixation Arte fact
3	Tissue processting Fixation ,dehydration ,clearing ,embdding
4	Factors influencing rate of impregnation Agitation ,heat,viscosity,ultrasonies,vacuum
5-7	Microtomy andparaffin section
8-9	Staining of tissuesections Hematoxylin ,eosin ,connective tissue ,stains
10-11	Special stains for proteine ,carbohydrates,lipid ,mucosubstance,pigments minerals ,apud cell and microorganisms
12	Preparationof bone sections
13	Demonstration of cytoplasmic granules organells and secial tissue
14	Neuropatholgical tech niques
15	Enzyme histochemistry and aplicaton

107. Course Evaluation

-Participation in the classroom.
-Providing various activities.
- Not less than four written semester exams during the academic year, in addition to the theoretical final exam and practical.
- Assignments and reports to solve questions in the form of extracurricular activities.

108. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Junqueira's.BasicHistoloy Stevens&Lowe's. Human Histology Robbins basic pathology
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Wikipedia

113. **Program Vision**

Program vision is written here as stated in the university's catalogue and website.

114. **Program Mission**

Program mission is written here as stated in the university's catalogue and website.

115. **Program Objectives**
General statements describing what the program or institution intends to achieve.

116. **Program Accreditation**
Does the program have program accreditation? And from which agency?

117. **Other external influences**
Is there a sponsor for the program?

118. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

119. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

120. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

121. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

122. Evaluation methods

Implemented at all stages of the program in general.

123. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

124. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

125. The most important sources of information about the program

State briefly the sources of information about the program.

126. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

109. Course Name:
Computer Applications
110. Course Code:
111. Semester / Year:
The first and second for the Third academic year
112. Description Preparation Date:
31-1-2024
113. Available Attendance Forms:
114. Number of Credit Hours (Total) / Number of Units (Total)
1 theoretical hour plus 2 practical hours
115. Course administrator's name (mention all, if more than one name)
Name: MSC. Ali Kareem Abed Email:alikareemit9@gmail.com Name : MSC. Zaniab Hameed Kadhim
116. Course Objectives

Course Objectives	Providing students with computer knowledge, including understanding its components, different types of operating systems, and various applications, as well as office software

117. Teaching and Learning Strategies

Strategy	

118. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-15	**30**	Identify the concept of the program, its benefits, specifications, features and speed of operation. Excel is a program - a vital concept, basic data types and how to enter them.	**Microsoft** Excel	Theoretical scientific lectures + scientific/interactive media presentations	Daily practical exams and students' interaction with questions, inquiries, homework,

		Identify the main screen and its components and it contains different options and effective actions, cancel the program, close the file. A workbook or worksheet - how to save the work - open the saved file, enter data and perform calculations, learn how to adjust or coordinate data and structure it within an integration or group of cells. - Learning about ways to collect data or a group of cells in its various forms, as well as how to sort data, etc. count, sqrt, ave, sum, min, max - Using some of the functions provided by the program, such as social functions, sharing the relevant ones. For which the program provides how to copy data or transfer data. Editing - Getting to know the revision process (and learning about the concept of arithmetic operations as well as the concept of absolute relative cells). - Controlling the dynamic display: changing			and reports

		its style and format through the constant use of tools. - Dealing with verification From how to convert data digitally and textually into diagrams of its types (and learning how to conduct transactions (chat handler) by following them and refining the details that they can do. - Learning how to add or delete rows or select them on the work page and how to print data digitally or it will change.			
16-25	**20**	The concept of the program, its operation, the steps of data analysis (SPSS), the statistical program - identifying the components of the main screen, entering data, saving and retrieving data, types of data (direct or calculated) - sorting and altering data, determining the statistical procedure through the statistical topics that the student addresses in Statistics lessons: Descriptive statistics (analytical) - how to include a variable or case,	Spss	Theoretical scientific lectures + scientific/interactive media presentations	Daily practical exams and students' interaction with questions, inquiries, homework, and reports

		merge files, descriptive analysis, recognize the statistical summary of the given data and benefit from the data it provides in exploring data or reports for columns or rows, regression - perform comparison of means, comparison between variables or (square) chi (such as non-parametric test) - conducting some parametric tests (quality control - applications of quality control panels (charts with dealing - charts) such as) line, histogram, pie chart, bar chart, scatter diagram graph. ... . and others			
26-30	**10**	The concept of the program and its benefits, its operation, the components of the main screen, the concept of the Power Point program and its benefits. (presentation) Presentations - building a new presentation through the templates provided by the program or dealing directly, storing the presentation, making the presentation,	power point	Theoretical scientific lectures + scientific/interactive media presentations	Daily practical exams and students' interaction with questions, inquiries, homework, and reports

		making modifications and saving the changes. Or text-planning image to build Presentation, inserting a new slide, whether it contains text, entering notes, entering the main titles of the slide (footers) or (headers) - Learn how to add drawings through the available drawing tools, modify the text, control its shape, layout, and change the plan, control the colors and background of the slide, and ways to control them. Such as zooming in and out or cutting, adding natural images - chart clip - adding and controlling tools, adding charts from Excel or a data page from databases - dealing with various display commands such as timing, moving from one slide to another and its methods, methods and setting sound effects for slides, animation, movement			

119. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

120. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

127. **Program Vision**
• Establishing specialized medical laboratories • Creating postgraduate studies (master's and doctorate) in pathological analysis specializations • Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

128. **Program Mission**
The program mission is written here as stated in the university's catalog and website.

129. **Program Objectives**
1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment. 2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria. 3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them. 4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others. 5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections. 6 - The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology. 7 - Its ability to deal with all modern technologies, including DNA analysis and forensic medicine

130. **Program Accreditation**
Does the program have program accreditation? And from which agency?

131. Other external influences

Quality Assurance Program of the Ministry of Higher Education and Scientific Research

132. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

133. Program Description

Credit Hours		Course Name	Course Code	Year/Level
practical	theoretical			
4	2	GeneralChemistry	**ML11**	First-year
4	2	Anatomy&MedicalTerminology	**ML12**	
4	2	Humanbiology	**ML13**	
3	1	Lab.Instrumentation	**ML14**	
--	2	MedicalEthics	**ML15**	
2	1	ComputerApplication	**ML16**	
--	1	Humanrights	**ML17**	
	1	EnglishLanguage	**ML18**	
4	2	MedicalMicrobiology	**ML21**	Second Year
4	2	ClinicalBiochemistry	**ML22**	
2	2	Humanphysiology	**ML23**	
2	2	Histology	**ML24**	
4	2	MolecularBiology	**ML25**	
4	2	Medicalparasitology	**ML26**	
	1	EnglishLanguage	**ML27**	
3	2	Histopathology	**ML31**	
3	2	Hematology	**ML32**	

2	2	Virology& Mycology	**ML33**	Third year
2	2	ClinicalChemistry	**ML34**	
3	2	Cytogenetic	**ML35**	
2	2	Immunology	**ML36**	
2	2	Advancedlaboratorytechnique	**ML37**	
2	1	ComputerApplication	**ML38**	
	1	EnglishLanguage	**ML39**	
4	2	ClinicalImmunology	**ML41**	Four year
4	2	DiagnosticMicrobiology	**ML42**	
4	2	AdvanceClinicalbiochemistry	**ML43**	
4	2	Parasitology	**ML44**	
4	2	Bloodtransfusion	**ML45**	
2	3	Histopathology	**ML46**	
	1	LaboratoryManagement	**ML47**	
	1	EnglishLanguage	**ML48**	
2	1	Biostatic	**ML49**	
5		Project	**ML410**	

134. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

135. **Teaching and Learning Strategies**
Teaching and learning strategies and methods adopted in the implementation of the program in general.

136. Evaluation methods
Implemented at all stages of the program in general.

137. Faculty
Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development
Mentoring new faculty members
Briefly describe the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

138. **Acceptance Criterion**
Central admission to the Ministry of Higher Education and Scientific Research)

139. **The most important sources of information about the program**
Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

140. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

121. Course Name:	
Virology and Mycology	
122. Course Code:	
ML 33	
123. Semester / Year:	
Year	
124. Description Preparation Date:	
31\1\2024	
125. Available Attendance Forms:	
Official working hours	
126. Number of Credit Hours (Total) / Number of Units (Total)	
Number of hours (6) / Number of units (4)	
127. Course administrator's name (mention all, if more than one name)	
Name: M.Sc. Atheer Fouad Awad Email : Atheeralshohani@gmail.com M.Sc. Huda Jabbar M.Sc. Yasser Saad	
128. Course Objectives	
Course Objectives	**Virology and Mycology aims to introduce the student t viruses and fungi that pose a threat to human health It is diagnosed and treated so that the student becor familiar with this science at the end of the academic yea**
129. Teaching and Learning Strategies	
Strategy	- Self-learning, discussion panels. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments

130. Course Structure

Week	Subject
1	General properties of Viruses.
	Structure, Classification and Nomenclature of the Viruses.
2	Atypical Virus-like agents (Prions, Defective viruses, Pseudovirion and Viriods).

3	Viral Genetic and Molecular&Viral Replication.
4	Viral Pathogenesis and Transmission
5	Immunity &Laboratory Diagnosis of Viruses
6	Herpes virus
7-8	Hepatitis virus
9	Human Immune Deficiency virus
10	Orthomyxovirus
11	Paramyxovirus
12	Enteric viruses (Rota, Polio and Reo viruses)
13	Rabies and other Neurotropic viruses
14	Poxvirus
15	Coronavirus
16	Adeno and Parvo viruses
17	Arbovirus
18	Oncogenic viruses
19	Bacteriophages (Bacterial viruses)
20	Antiviral Drugs&Viral vaccines
	الفصل الثاني
21	Introduction to medical mycology, History and
22	Morphology, Classification, reproduction of pathogenic fungi
23	Superficial mycosis : Tinea types and Dematiaceuos (black fungi
24	Cutaneous mycosis: Trychphyton spp, Microsporium spp and Epidermophyton spp
25	Subcutaneous mycosis: Sporothricosis and Mycetoma
26	Infection due to filamentous fungi (Zygomycosis and Aspergillosis)
27	Infection caused by yeasts(Candidiasis and Cryptococcosis
28	Opportunistic mycosis: Mucor and Penicillosis. Aantibiotics produced by fungi
29	Systemic mycosis: Coccidiomycosis and Blastomycosis
30	Histoplasmosis and Paracoccidiomycosis Antifungal agents and Mycotoxins

131. Course Evaluation

Participation in the classroom.
Providing various activities.
- Not less than four written semester exams during the academic year, in addition to the theoretical final exam
And practical.

- Assignments and reports to solve questions in the form of extracurricular activities.	
132. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Jawetz, Melnick & Adelberg's Medical Microbiology 24th Edition
Recommended books and references (scientific journals, reports...)	Review of medical microbiology a immunology, W Levinson - dilatoz.
Electronic References, Websites	1. Zafar, F., Jabeen, K. and Farooqi, J. (Eds.). (2017). Practical guide and atlas for the diagnosis offungal infection., the aga kha university, india. 2. Campbell, Colin K., Elizabeth M. Johnson, and David W. Warnock. (2013). Identification of Pathogenic Fungi, 2nd ed. Chichester, West Sussex ,Wiley-Blackwell

141. **Program Vision**
Program vision is written here as stated in the university's catalogue and website.

142. **Program Mission**
Program mission is written here as stated in the university's catalogue and website.

143. **Program Objectives**
General statements describing what the program or institution intends to achieve.

144. **Program Accreditation**
Does the program have program accreditation? And from which agency?

145. **Other external influences**

Is there a sponsor for the program?

146. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

147. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
2024	**ML32**	**hematology**	**theoretical**	**practical**
			3	**2**

148. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

149. **Teaching and Learning Strategies**
Teaching and learning strategies and methods adopted in the implementation of the program in general.

150. Evaluation methods
Implemented at all stages of the program in general.

151. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant teacher	yes				yes	
Assistant teacher	yes					yes

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

152. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

153. The most important sources of information about the program

State briefly the sources of information about the program.

154. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2024	ML32	hematology	basic	x	x	x	x	x	x	x	x	x	x		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

133.	Course Name:hematology
134.	Course Code:ML32
135.	Semester / Year: year 2024 third stage
136.	Description Preparation Date:31/1/2024
137.	Available Attendance Forms:basic
138.	Number of Credit Hours (Total) / Number of Units (Total)
139.	Course administrator's name (mention all, if more than one name)
Name:MSc.odayjawadjasim Email:fmmpogfj@gmail.com Name/MSc.Maryem Mohsen nasser	
140.	Course Objectives

Course Objectives The student will gain knowledge about the subject of hematology in terms of: - Giving the student an expanded and modern idea about the science of blood diseases and the normal and abnormal ranges The components of blood, in addition to the changes that occur when suffering from various diseases. - Establishing a good information base on hematology so that the student can keep up with the medical community that... He will live with him after graduation hospitals.	• ..... • ..... • .....

141.	Teaching and Learning Strategies
Strategy	A-1 The ability to identify most of the blood variables that cause disease and those that do not cause disease as well.

	A-2 The ability to define the various relationships that occ between blood components and their connections With diseases B1 - The ability to observe and classify changes occurring blood components. B2 - The ability to understand the basic steps for the purpose of diagnosing blood diseases C1 - The ability to think about all possibilities or circumstances that cause events the disease. C2 - Developing the student's ability to deal with information as a solution method 0 Teaching and learning methods - Method of giving lectures. - Self-learning, discussion sessions. - Show explanatory videos. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop capabilities. - Solving problems as class assignments. 1 Evaluation methods - Participation in the classroom. - Providing various activities. - At least four written semester tests during the academic year in addition to the exam. The theoretical and practical final. - Assignments and reports to solve questions in the form classroom activities.

142. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3		ntroduction of hematology (definition, portance, general nction of blood cells).		
2and3	6		Hemopoiesis,		

4	3		erythropoiesis, morphology of RBCs, cell mbrane of RBCs d metabolism of RBCs. Haemoglobin (ucture, synthesis d level in blood l in erythrocytes)		
5	3		Anemia (definition, classification, causes)		
6	3		Iron metabolisim, iron deficiency anemia		
7	3		Megaloblastic anaemia(B12 deficiency, causes, Dx) pernicious anaemia		
8	3		Folate deficiency (causes & diagnosis)		
9and10	6		Haemolyticanaemia		
11	3		Thalassemia (definition, types, causes and diagnosis)		
12	3		Sickle cell anaemia		
13	3		Aplastic anaemia		
14	3		Polycythaemia		
15	3		مراجعة للمادة		
16and17	6		WBC (classification and general function of each cell)		
18	3		Non-malignant WBC disorders (neutrophilia, neutropenia,		

			lymphocytosis, lymphopenia, eosinophilia, monocytosis,)		
19	3		Disorder of lymphocytes		
20	3		Malignant diseases of WBCs leukaemia, (definition, types, classification, leukemoid reaction)		
21	3		Acute leukaemia, ALL, AML (causes diagnosis of each)		
22	3		Chronic leukaemia CLL, CML (causes diagnosis of each)		
23	3		Lymphoma, Hodgkin lymphoma (causes and lab finding)		
24	3		Non Hodgkin Lymphoma (causes and lab finding)		
25	3		Platelets (morphology, general functions)		
26	3		Haemostasis		
27	3		Bleeding disorder		
28 and29	6		Arterial thrombosis, venous thrombosis and risk factors		
30	3		مراجعة للمادة		

143. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports ....etc	
144. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Atlas of clinical hematology ABC 0f clinical hematology A-Z of hematology
Recommended books and references (scientific journals, reports...)	.Essential hematology Barbra baen :6th edition 2. Hoff brand hematology 6 th edition 3. leukemia diagnosis 4 th edition
Electronic References, Websites	yes

155. **Program Vision**

1. Establishing specialized medical laboratories

2- Creating postgraduate studies (master's and doctoral) in pathological analysis specializations
3- Hosting pathological analysis specialists from prestigious universities in the world in order to raise the scientific level of graduates on the same level as colleges in prestigious universities

156. **Program Mission**

The college's mission reflects the main reason for which the college was established, and the mission from this logic reflects the groups of activities, programs, and services that the college seeks to provide and the means through which the college's mission can be achieved.

157. **Program Objectives**

The laboratory management course aims to enable the medical laboratory technology student to demonstrate the ability to lead in society in the field of laboratory medical sciences, the ability to demonstrate leadership skills in medical laboratory management, the ability to communicate professionally with patients and medical service providers, and also to work successfully as part of an integrated medical team.

158. Program Accreditation

Non

159. Other external influences

Non

160. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**10**			
College Requirements	**10**			
Department Requirements	**10**			
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

161. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024	**ML47**	**Laboratory management**	**theoretical**	

162. Expected learning outcomes of the program

Knowledge	
a-Knowledge and understanding: The course aims for the student to be able, at the end of the	Types of laboratories and the tasks of the laboratory administrator Learn about modern methods of laboratory management, such as using the Internet Knowledge of professional ethics and how to deal with patients and

academic year, to recognize:-	their privacy Knowledge of laboratory management methods and techniques related to saving data and preparing necessary statistics
Skills	
b-Course-specific skills objectivesGeneral and transferable skills	1- The student learns about modern methods in laboratory management 2- Learn how to receive sample forms, ways to handle them, guide the patient, and deliver the results 3- The student learns about carrying out warehouse work for medical laboratory warehouse
c-thinking skills	- Developing the student's ability to deal with various types of laboratories and how to manage them properly - Providing technical and clinical services and skills in the field of laboratory techniques and scientific research in accordance with international standards to provide the best services to society
Ethics	
For cognitive purposes	Skill objectives

163. Teaching and Learning Strategies

Developing teaching curricula compatible with approved international curricula. Sending students for training in educational hospitals in order to gain experiences that simulate reality.

164. Evaluation methods

-Scientific tests
-Theoretical tests.
-Reports and studies

165. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
YasameenWaleedShaheed	*					*

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members
Extracurricular activity

166. **Acceptance Criterion**
Central admission to the Ministry of Higher Education and Scientific Research

167. **The most important sources of information about the program**
Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

168. Program Development Plan
Developing students' abilities in research and investigation to conduct modern discussion circles, as well as urging students to consult sources, books, and magazines as a source of information (special requirements), and including, for example, extracurricular activities to solve assignments.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Third stage	ML47	Laboratory management						*	*			*	*		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

145. Course Name:
Laboratory management
146. Course Code:
ML37
147. Semester / Year:
2023/2024
148. Description Preparation Date:
1/1/2024
149. Available Attendance Forms:
150. Number of Credit Hours (Total) / Number of Units (Total)
4 hours
151. Course administrator's name (mention all, if more than one name)
Name: YasameenWaleed Email:
152. Course Objectives

Course Objectives	**Teaching the student to perform various techniques rela to advanced pathological analyses**

153. Teaching and Learning Strategies	
Strategy	-Method of giving lectures -Self-learning, discussion panels -Show explanatory videos -Activities in the classroom, focusing on the practical a laboratory aspects -Directing students to some websites to benefit from them develop their capabilities

154. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
FIRST	2	Thestudent	1. Laboratory premise -General		

Secon Third Fourtl		understands	design objective. Laboratory type and classification 2. The role thelaboratory in the 3. diagnosisandcontrol infection. 4. Laboratory management Definition- Who a the managers in the health laboratories. - Level of manageme - Planning, organization, Directi leadership, Controllin - Mission of health laboratory services. - Laboratory contribution to patie care and community health 4-Planning -Definition -Theplanning functions -Strategic planning -determining priorities -Approaches to setting t goal and objective 5.Organization -Definition -Structural organization -		

			-Theorganization process -Organization supervision. -Organization Charts 6. Directing - -Definition - -directing and people - - Motivation of staff. - -Practical approach to enhance motivation in health laboratories in the Eastern Mediterrane Region. 7. Leadership - - Definition -Leadership styles -Useful characteristics effective leadership. 8.Controlling Definition 9.Pre-analytical control -Biological sources of variation. Genetic, sex, Age, etc. 10. Sources in variati in specimen, collectio transport		
155. Course Evaluation					
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.					
156. Learning and Teaching Resources					

Required textbooks (curricular books, if ar	Recommended supporting books and references (scientific journals, reports....) electronic references, Internet sites
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://www.acs.org/content/acs/en/care s/college-to-career/chemistrycareers/lab management.html

169. **Program Vision**
• Establishing specialized medical laboratories • Creating postgraduate studies (master's and doctorate) in pathological analysis specializations • Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

170. **Program Mission**
The program mission is written here as stated in the university's catalog and website.

171. **Program Objectives**
1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment. 2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria. 3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important

differential examinations for each disease and conduct them.

4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.

5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections.

6 - The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.

7 - Its ability to deal with all modern technologies, including DNA analysis and forensic medicine

172. Program Accreditation

Does the program have program accreditation? And from which agency?

173. Other external influences

Quality Assurance Program of the Ministry of Higher Education and Scientific Research

174. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

175. Program Description

Credit Hours		Course Name	Course Code	Year/Level
Practical	theoretical			
4	2	GeneralChemistry	**ML11**	First-year
4	2	Anatomy&MedicalTerminology	**ML12**	
4	2	Humanbiology	**ML13**	
3	1	Lab.Instrumentation	**ML14**	
--	2	MedicalEthics	**ML15**	
2	1	ComputerApplication	**ML16**	
--	1	Humanrights	**ML17**	
	1	EnglishLanguage	**ML18**	
4	2	MedicalMicrobiology	**ML21**	Second Year
4	2	ClinicalBiochemistry	**ML22**	
2	2	Humanphysiology	**ML23**	
2	2	Histology	**ML24**	
4	2	MolecularBiology	**ML25**	
4	2	Medicalparasitology	**ML26**	
	1	EnglishLanguage	**ML27**	
3	2	Histopathology	**ML31**	Third year
3	2	Hematology	**ML32**	
2	2	Virology& Mycology	**ML33**	
2	2	ClinicalChemistry	**ML34**	
3	2	Cytogenetic	**ML35**	
2	2	Immunology	**ML36**	
2	2	Advancedlaboratorytechnique	**ML37**	
2	1	ComputerApplication	**ML38**	
	1	EnglishLanguage	**ML39**	
4	2	ClinicalImmunology	**ML41**	Four year
4	2	DiagnosticMicrobiology	**ML42**	
4	2	AdvanceClinicalbiochemistry	**ML43**	
4	2	Parasitology	**ML44**	
4	2	Bloodtransfusion	**ML45**	
2	3	Histopathology	**ML46**	
	1	LaboratoryManagement	**ML47**	
	1	EnglishLanguage	**ML48**	
2	1	Biostatic	**ML49**	

5		Project	**ML410**	

176. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

177. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

178. Evaluation methods

Implemented at all stages of the program in general.

179. Faculty

Faculty Members

Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of the teaching staff**	
	General	**Special**			**Staff**	**Lecturer**

Professional Development
Mentoring new faculty members
Briefly describe the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

180. Acceptance Criterion

Central admission to the Ministry of Higher Education and Scientific Research)

181. **The most important sources of information about the program**
Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

182. Program Development Plan

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

157. Course Name:	
parasitology	
158. Course Code:	
159. Semester / Year:	
First and Second semester/2024	
160. Description Preparation Date:	
31\1\2024	
161. Available Attendance Forms:	
Official working hours	
162. Number of Credit Hours (Total) / Number of Units (Total)	
Number of hours (6) / Number of units (4)	
163. Course administrator's name (mention all, if more than one name)	
Name: M.Sc. jabbar RazzkKzar M.Sc. Hanaa Rahim Falih Email:	
164. Course Objectives	
Course Objectives	**Providing the student with knowledge about medi parasitology in terms of:** **- Diagnosing various types of pathogenic parasites using different techniques.** **- Identify the epidemiology and diseases that oc as a result of parasitic infection and the methods transmission.**
165. Teaching and Learning Strategies	
Strategy	- Self-learning, discussion panels. - Exercises and activities in the classroom, focusing on the practica and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments

166. Course Structure

Weeks	**تفاصيل المفردات**

1	-Introduction to diagnostic medical parasitology -Laboratory Safety(Handling Specimens) -Care of the microscope Samples we need for detection about the parasites-
2	-Strategies for diagnosis of parasitic infection -Collection and transport of specimens for enteric pathogens - Factors interfering for all types of stool collection - Precaution in the procedure of collection of specimens
3	-Examination of stool sample: -Macroscopic examination of stool - Microscopic examination of stool
4	Preparation of solution of wet mount; the advantages and disadvantages of each solution: -Saline solution Iodine solution- Eosin solution-
5	Preparation of preservatives and fixatives for mounted slides - Formalin solution (5-10%) - PVA (PolyVinyle Alcohol) as fixative - Schaudinnes fixatives
6	-Laboratory diagnosis of enteric protozoa -The routine methods used in Laboratory diagnosis
7	-Preparation of buffered methylene blue (BMB) stain for detect amoebic trophozoite.
8	-Concentration methods -Purpose to use concentration methods Types of concentration methods -
9	-Artifacts found in fecal specimens (Artifacts mimicking ova and parasites). Kato Kats method
10	-Application of immunological methods in diagnosis of parasites in general - Detection of antibodies in serum of patients with enteric protozoa(ELISA)
11	- Detection of antigens in stool specimen protozoa(ELISA)
12	- -Rapid test as an immunological diagnosis for visceral leishmaniasis

13	Laboratory diagnosis intestinal coccidian e.g *Cryptosporidium parvum* by Modified Zeihl- Neelsen stain
14	-Direct detection and Indirect Diagnosis(serological methods) for detection of *Toxoplasma gondii*
15	First term examination
16	-Methods of laboratory diagnosis include: -Preparation and detection of parasite in thick and thin blood Smear -Quantitative Buffy Coat(QBC) test -Non microscopic test -Rapid Diagnostic Test(RDTs)
17	-Preparation of stains: (Geimsa stain, Leishman stain and Iron-hematoxylin)
18	-Laboratory diagnosis of *Taenia saginata&T.solium* -Differentiate between both species in laboratory
19	-The use special technique in the examination of urine sample (Filtration by Schisto-Kit) as a direct method for diagnosis of *Schistosoma haematobium*
20	-Modified Kato-Katz technique for examination of thick smear.
21-23	-Harada-mori technique for cultivation of hook worm and detection of rhabditiformand filariform larvae
24	- Baermann Technique for recover larvae from intestinal or lung parasitic infections -Advantage and Disadvantage -
25	Methods of Identification of some parasites :-Body fluid exam aspiration of body fluids
26	Urine examination : detection of some trematodes in urine,colletion of urogenital specimen
27	Sputum examination for larva of lung flukes ,some nematodes larvae and pulmonary abscess
26	Lab diagnosis of ascaris lumbricoides : detection of egg ,larvae and adult worm
27	Scotch Tape Preparation -State the proper method for performing the scotch tape preparation Identify parasites by a scotch tape preparation

28	Staining and preservation of some intestinal worms by lacto phenol cotton blue
29	Culture methods : classification and identification of some parasites can be cultured
30	Second term examination

167. Course Evaluation

Participation in the classroom.
Providing various activities.
- Not less than four written semester exams during the academic year, in addition to the theoretical final exam
And practical.
- Assignments and reports to solve questions in the form of extracurricular activities.

168. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1. Jawetz, Melnick, &Adelberg'sMedical Microbiology, 24th :Edition by Vishal 2. Garcia, MS (2009).Diagnostic Medical Parasitology,American Society forMicrobiology Press. 3. John DT. and Petri WA , 2006
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

183. **Program Vision**

1. Establishing specialized medical laboratories
2. Creating postgraduate studies (master's and doctoral) in pathological analysis specializations
3. Hosting pathological analysis specialists from high rank universities in the world in order to raise the academic level of graduates and enable it to be in the ranks of high education levels colleges and universities.

184. **Program Mission**

The Department of Medical Laboratory Technologies was established in the academic year 2015/2016 to be part of the scientific departments at Al Kut University College. It includes morning and evening studies and follows the annual system, as the duration of study in the department is four years, after which the student will be graduated and holds a bachelor's degree in Pathological analyses technologies. The department includes a number of specialized laboratories that are equipped with the best modern laboratory equipment. It contributes effectively to develop the student's scientific capabilities and it is matchingthe requirements of the theoretical aspect at the level of each academic subject.

185. **Program Objectives**

1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal with all laboratory equipment.
2- The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and being able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria.
3- The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them.
4- The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.
5- The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and perform all partial tests, pathological parameters, and staining for histological sections.
6- The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.
7- Its ability to deal with all modern technologies, including DNA analysis and forensic medicine.

186. **Program Accreditation**

The program is accredited by the Ministry of Higher Education and Scientific Research

187. **Other external influences**
Is there a sponsor for the program? Quality Assurance Program of the Ministry of Higher Education and Scientific Research.

188. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

189. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
Fourth Grade	**ML42**	**Diagnostic Microbiology**	**theoretical**	**practical**
			2	**4**

190. Expected learning outcomes of the program

Knowledge	
A1-The ability to apply knowledge in biological and chemical sciences. A2- The ability to complete pathological analysis tasks in a scientific manner based on basic science	Theoretical, practical, applied lectures, daily assignments, and discussions
Skills	
B1 - The ability to prepare and carry out experimentsLaboratory, in addition to interpretation and analysis results and preparing the final report.	Theoretical, practical, applied lectures, daily assignments, and discussions
B2 - The ability to diagnose pathological injuries through laboratory work, to achieve the desired goal practically in the medical fields	Theoretical, practical, applied lectures, daily assignments, and discussions
Ethics	
C1- The ability to use modern technologies, skills, and tools necessary to practice diagnosis, patients depending on laboratory work mechanisms.	Theoretical, practical, applied lectures, daily assignments, and discussions

C 2- Realizing the moral responsibility to give the most accurate results	
D - General and transferable skills (to other skillsrelated to employability and personal development). D1- The ability to work within a team that includes all medical and health specialties. D2- The ability to develop oneself and work in the field	Theoretical, practical, applied lectures, daily assignments, and discussions Exams, assignments, daily assignments, discussions, laboratory reports, and a graduation project

191. Teaching and Learning Strategies

Theoretical, practical, applied lectures, daily assignments, and discussions

192. Evaluation methods

Exams, assignments, daily assignments, discussions, laboratory reports, and a graduation project

193. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Lecturer-PhD	Biotechnology	Molecular Biology			1	
Assist. Lecturer-MSc	Microbiology	Microbiology				1

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

194. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)
Central admission to the Ministry of Higher Education and Scientific Research

195. **The most important sources of information about the program**
Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research.

196. Program Development Plan
Extracurricular activity

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
Fourth Grade	ML42	Diagnostic Microbiology	Basic	X	X			X	X			X	X		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

169. Course Name:	
Diagnostic Microbiology	
170. Course Code:	
ML42	
171. Semester / Year:	
1st and 2nd of Fourth Year	
172. Description Preparation Date:	
1-1-2024	
173. Available Attendance Forms:	
Normal attending in the class	
174. Number of Credit Hours (Total) / Number of Units (Total)	
4 hours practical application and 2 hours for theoretical studying	
175. Course administrator's name (mention all, if more than one name)	
Name: Arkan Hasan Frayyeh, PhD Email:arkanhf@yahoo.com	
176. Course Objectives	
Course Objectiv	The student will gain knowledge about diagnostic bacteria in terms of: - Identify the shapes and types of bacteria under the microscope, and take samples from the infected person and culture them for the purpose of diagnosing the type of bacteria and identifying the disease causing it in order to prescribe the appropriate treatment as well knowing its transmission and epidemiological methods for the purpose of avoiding its spread and knowing ways of prevention
177. Teaching and Learning Strategies	
Strategy	A1- The ability to identify most types of bacteria that cause disease and those that do not cause disease as well. B - Skills related to diagnostic bacteria B1- The ability to understand how infection occurs transmitted. B2 - The ability to understand the basic steps for the purpose of diagnosing bacterial infection and how to isolate it from patient to be diagnosed in the aim of prescribing appropriate treatment C - Thinking skills. C 1 - The ability to think about all the possibilities or circumstances that help bacteria cause disease. C2 - Developing the student's ability to deal with information as a solution method. D- General and transferable skills (other skills related to employability and

	personal development)

178. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
				Method of giving lectures. - Self-learning, discussion sessions. - Show explanatory videos. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments.	Participation in the classroom. - Providing various activities. - Not less than four semester written tests during the academic year, in addition to the final exam Theoretical and practical. - Assignments and reports to solve questions in the form of extracurricular activities

179. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc

180. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic lectures and textbook
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	1- Lapage SP(1976). Biochemical Tests for Identification of Medical Bacteria. *J Clin Pathol*. 2-Murray, P. R., Rosenthal, K. S., & Pfaller, M. A. (2020). *Medical Microbiology E-Book*. Elsevier Health Sciences. 3-Ryan, K. J., & Ray, C. G. (2004). Medical microbiology. *McGraw Hill*

Week s	Subject				
1	**Diagnostic Microbiology: purpose and philosophy**	DiagnosticMicrobiology: purpose and philosophy			
2	**Laboratory safety**	Generalsafety considerations			
		Biohazards and practices specifictomicrobiologyin general	-Biologicalsafety cabinet		
			-Protective clothing		
			-Decontamination		
			-Personalpractice		
		Classificationof biological agentsonthebasisof hazard	-Specific agents		
		Specialprecautionsfor specificareasofclinical microbiology	-Microbiology		
			-Virology		
			-Mycology		
			-Parasitology		
			-Serology		
3	**-Managing the clinical microbiology laboratory: effective**	-Managingtheclinical microbiology laboratory effectivepatientcarei na cost	-Education		
			-Limitation on testing		
			-Strategies for choosingmethods		
	patientcarein a cost	Rapiddetectionof infectious agents	-Visualtest		
			-Agglutination methods		
			-Automation	-VITIC2	
				-ELISA	
				-RIA	
				-HPLC	
				-PCR	
			-Otherstrategies		

		-Decreasinganalysistime foridentificationresults	-Noncommercial methods		
			-Commercial methods		
4	**-Selection, collection,and transport of specimens for microbiologic alexamination**	- Selection,collection,a nd transportofspecimens for microbiological examination			
			-Anaerobic collection procedures		
			-Anaerobic specime n transport		
5	**-Optical methodsfor laboratory diagnosisof infectious diseases**	Examinationoffresh material	-Direct examination of clinicalspecimens		
			-Slightlymodified directpreparation s of clinical materials		
		-Opticalmethodsfor laboratorydiagnosisof infectious diseases	-Preparationofa smear		
			-Gramstain		
			-Acid-faststain		
			-Differential stains for parasites		
			-Differential stains for blood smear and tissue sections		
			-Fungalstains		
			-Acridineorange		
			-Rhodamine-auramine		
6	**-Cultivation andisolation of viable**	-Preparation and characteristicsofcertai n frequently used media	-Blood agar, Chocolate agar….etc		
	pathogens				
7-8	**Microbiologic almethodsfor identification of**	Basic approaches to identificationofpathoge ns	-Colonial morphology		
			-Gramstain		

	microorganisms	Rapidbiochemicaltests	Catalase,oxidase, coagulase, spot indole, bile solubility,…etc.		
		Conventionalbiochemical tests	-Methyl red, sugar fermentation, urease production, …etc.		
		Modificationof conventionalbiochemical test	SuchasAPI20E		
9-10	**- Nontraditional methods for identification of pathogens or their products**	Particleagglutination, ELISA, PCR, ……..etc.	Important properties -Laboratory diagnosis		
11	**-Antibiotic susceptibility tests**	Discdiffusion method			
		MIC			
		VITC			
12-13	**Methodsfor identification of etiological agents of infectious disease**	-Staphylococci -Streptococci -Neisseria -Enterobacteriaceae -Pseudomonas -Other bacteria			
14-15	**Diagnosisby organsystem Bloodstream infections**	General considerations	causes	Bacteria, fungi, parasites andviruses	
			Type of bacteremia		
			Type of blood stream infections	Intravascular infections	
				Extravascular infections	
		Detectionof bacteremia	-Specimen collection	-Preparation of the site	
				-Specimen volume	
				-Timing of collection	
				Miscellaneou matters	Anticoagulation
					-Dilution

					-Blood culture media and additives
			-Culture techniques	Conventional blood culture	-Incubation conditionsand detecting growth
			Handlingpositive blood culture		
		Specialproblemsand unusualmicroorganisms	-Fungi, Mycobacteria, Brucella,…etc	.	
16-17	**Meningitis and other infectionsof the central nervous system**	General considerations	Anatomy		
			-Routesofinfections		
			-Diseases of the Centralnervous system	-Meningitis	
				-Encephalitis	
				-Brain abscess	
		Laboratorydiagnosis Meningitis	-Specimen collection and transport		
			-CSFfindings	Leukocytes, proteinand glucose	
			-Visualdetection of etiological agents	-Staining	
				-Wet preparation	
			-Direct detection of etiological agents	-Serology	
				-Molecular methods	
			-Culture		
18-19	**Infectionof the respiratory tract**	General consideration, anatomyandnormalstate ofrespiratory tract			
		-Floraofrespiratorytract			
		-pathogenicmechanisms used by agents			
		-Upperrespiratorytract	-Etiological agents		
			-Collectionand transport- of		

			specimens		
			-Direct visual examination		
			-Culture		
			Nonclture methods	PCR, RIA	
20-21	**Infectionof theurinary tract**	-Generalconsiderations	-Anatomy		
			-Resident microorganismsof the urinary tract		
		-Infectionoftheurinary tract	-Etiological agents		
		-Pathogenesis	-Routes of infection		
			-Thehost-parasite relationship		
		-Typeof infection	Urethritis, cystitis, pyelonephritis		
		-Laboratorydiagnosis	-Specimen collection	-Clean-catch midstream urine	
				-Straight catheterized urine	
				-Bladder aspiration	
				-Indwelling catheter	
			-Specimen transport		
			-Screening procedures	-Gramstain	
				-Indirect indices -Automated	Nitrate reductase, leukocyte esterase, catalasetests
				System -General urine examination	
			Urine culture	-Inoculation and	

				incubation	
				- Interpretatio	
				nofurine culture	
22	**Genitaltract infections**		-Anatomy		
			-Resident microbialflora		
			-Sexually transmitted diseasesandother genital tract infections		
		Genitaltractinfections	Etiological agents		
			-Routes transmission		
			-Clinical manifestations	Asymptomatic	
				-Dysuria	
				-Urethral discharge	
				-Lesionsof the skin and mucous membranes	
				-Vaginitis	
				-Cervicitis	
				-Other infections	
			-Lower genital tractinfections	-Urethritis, cervicitis and vaginitis	-Specimen collection
					-Direct microscopic examination
					-Culture -Nonclture
					Methods
23-24	**Gastrointestinal tract infections**	-Generalconsiderations	-Anatomy		
			-Resident microbialflora		
		-Gastroenteritis	-Pathogenesis	-Host factors	

				-Microbial factors	-Primary pathogenic mechanisms
					-Toxins
					-Attachment
					Invasion
			Etiological agents		
		-Laboratorydiagnosisof gastrointestinal tract	Specimen collection	General comments	
		infections	transport	-Stool specimens for bacteriological culture	
				-Stool specimens forovaand parasites	
				-Stool specimens for viruses	
			Direct detection of agents	-Wet mounts -Stains -Antigen detection -Molecular techniques	
			-Laboratory diagnosis		
25	**Infections of theeyes,ears and sinuses**	-Anatomy			
		--Residentmicrobialflora			
			-Specimen collection		
			-Direct visual examination		
			-Culture		
			-Nonculture methods		
26	**Skin,Soft tissueand wound infections**	-Generalconsiderations			
		-Laboratorydiagnosis procedures	-Gramstain		
			-Culture		

27	**Normalsterile body fluids, bone andbone marrow and solid tissue**	-Specimensfromsterile body sites	-Fluids	-Pleural fluid	
				-Peritoneal fluid	
				-Pericardial fluid	
				-Jointfluid	
			-Bone	Bone marrow aspiration or biopsy	
		-Laboratorydiagnosis	Specimen	-Direct	

			collection and transport	examination	
				-Culture	
28	**-Laboratory methods diagnosis parasitic infections**	-Specimencollectionand transport			
		-Specimenprocessing			
		-Microscopic examination			
29	**-Laboratory methods in basic mycology**	Collection,andtransportof clinical specimens	-Direct microscopic examination		
			-Culture		
30	**-Laboratory methods in basicvirology**	Specimenselectionand collection			
		-Specimen transport and storage			
		-Specimenprocessing			
		Virusdetection methods	-Cytology and histology		
			-Electron microscopy		
			Immunodiagnosis (antigen detection)		
			-Molecular detection		
			-Cellculture		
			-Serology (antibody detection)		

197. **Program Vision**

An ambitious picture for the future of the academic program, to be an advanced, inspiring, motivating, realistic and applicable programme.

198. **Program Mission**

It briefly explains the objectives and activities necessary to achieve them, and also identifies the program's development paths and directions.

199. **Program Objectives**

1- Preparing graduates with theoretical and scientific skills to meet the needs of the health and medical reality and health institutions
2- Graduates acquire the necessary scientific skills and health and medical methods in the field of microbiology
3- Preparing graduates to participate effectively in building the health reality of society

200. **Program Accreditation**

All courses/study subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), along with the number of study units.

201. **Other external influences**

Quality assurance program for the Ministry of Higher Education and Scientific Research

202. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

203. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2023-2024	ML21	Medical microbiology	theoretical	practical
			2	4

204. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning outcomes 1 1- The ability to apply knowledge in studying pathogenic microbes and how to classify them 2- The ability to define microbial diseases and ways to control them
Skills	
Learning Outcomes 2	Learning outcomes 2 1- The ability to understand the nature of pathogenic microbes that infect various body systems. 2- - The ability to understand the injuryPathogenesis, its symptoms, how to control each disease, and studying the body's resistance to the studied diseases caused by microbes
Learning Outcomes 3	Learning outcomes 3 1- The ability to think about the disease and methods of diagnosing the microbes that cause it. 2 - Developing the student's ability to deal with information as a solution method
Ethics	
Learning Outcomes 4	Learning outcomes 4 -1 The ability to work within a team that includes all medical and health specialties 2-The ability to develop oneself and field work.
Learning Outcomes 5	A compatible set of knowledge, skills, and values that the student has acquired after the successful completion of the academic program. The learning outcomes for each course must be determined in a way that achieves the program objectives.

205. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

206. Evaluation methods

- Participation in the classroom.
- Providing various activities.
- Not less than four semester written exams during the academic year, in addition to the theoretical and practical final exam.
- - Assignments and reports to solve questions in the form of classroom activities.

207. Faculty

Faculty Members: LumaHikmat AL- Bayati

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Doctor	Veterinary medicine	microbiology			✓	

Professional Development

Mentoring new faculty members

Developing the vocabulary of microbiology, especially its practical aspects

Professional development of faculty members

Developing the vocabulary of microbiology, especially its practical aspects, and arrangements for academic and professional development for faculty members, such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

208. Acceptance Criterion

Central admission to the Ministry of Higher Education and Scientific Research

209. The most important sources of information about the program

Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

210. Program Development Plan

1- Websites of Iraqi and foreign universities
2- Workshops held by the Ministry of Higher Education in addition to the Ministry's standards

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	
2023-2024	ML21	Medical microbiology	basic	✓	✓			✓				✓				

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

181. Course Name: Medical microbiology	
182. Course Code:ML21	
183. Semester / Year: year	
184. Description Preparation Date: 20-1-2024	
185. Available Attendance Forms:	
186. Number of Credit Hours : 6 hours (2 hours theoretical and 4 hours practical)	
187. Course administrator's name (mention all, if more than one name)	
Name: LumaHikmat Al- Bayati Email:lumahikmat@uowasit.edu.iq	
188. Course Objectives	
Course Objectives	- **Preparing graduates with theoretical and scientific skills to meet the needs of the health and medical reality and health institutions** - **Graduates acquire the necessary scientific skills and health methods** - **And medical sciences in the field of microbiology** - **Preparing graduates to participate effectively in building health reality of society**
189. Teaching and Learning Strategies	
Strategy	1. Cognitive objectives. 2. Knowledge of approved medical terminology 3. Knowledge of scientific research methods 4. Know the basics and axioms in medical microbiology 5. The ability to understand the scientific foundations microbiology 6. Acquire skill in treating and diagnosing bacter

	diseases

190. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	6 hours	Teaching basics Microbiology and diagnostic skills To diagnose diseases Bacterial	Medical microbiology		Semester and final exams, in addition to quizzes and seminars

191. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

192. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical Microbiology Book (Jawetz)
Main references (sources)	1.Brooks, G. F., Jawetz, E., Melnick, J. L., &Adelberg, E. A. (2010). Jawetz, Melnick, & Adelberg's medical microbiology. New York: McGraw Hill Medical. 2. Murray, P. R., Rosenthal, K. S., &Pfaller, M. A. (2013). Medical microbiology. Philadelphia: Elsevier/Saunders.
Recommended books and references (scientific journals, reports...)	All modern medical microbiolo books

Electronic References, Websites	Google Scholar

211. Program Vision

Program vision is written here as stated in the university's catalogue and website.

212. Program Mission

Program mission is written here as stated in the university's catalogue and website.

213. Program Objectives

General statements describing what the program or institution intends to achieve.

214. Program Accreditation

Does the program have program accreditation? And from which agency?

215. Other external influences

Is there a sponsor for the program?

216. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

217. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
			theoretical	**practical**

218. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

219. **Teaching and Learning Strategies**
Teaching and learning strategies and methods adopted in the implementation of the program in general.

220. Evaluation methods
Implemented at all stages of the program in general.

221. Faculty						
Faculty Members						
Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of the teaching staff**	
	General	**Special**			**Staff**	**Lecturer**

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

222. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

223. **The most important sources of information about the program**
State briefly the sources of information about the program.

224. Program Development Plan

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

193. Course Name:

Clinical Biochemistry

194. Course Code:

ML22

195. Semester / Year:

Second course / 2024

196. Description Preparation Date:

31/1/2024

197. Available Attendance Forms:

198. Number of Credit Hours (Total) / Number of Units (Total)

199. Course administrator's name (mention all, if more than one name)

Name: Ali Shakir Dakhil Email :alishd70@gmail.com
Ahmed kareem

200. Course Objectives

Course Objectives	• ..... • ..... • .....

201. Teaching and Learning Strategies

Strategy	

202. Course Structure

Week	Subject
1	INTRODUCTION TO METABOLISM - Food energy
2 &3	enzymes and Isoenzymes Regulation of enzyme activity by covalent modification Michaeil's - Menten theory Inhibitors of enzymes deficient or defective enzymes: Phenylketonuria Lactose deficiency
4&5	CARBOHYDRATE METABOLISM - Oxidation of Glucose: a) glycolysis

	1- Transport of glucose into cells 2- Reaction of glycolysis 3- Hormonal regulation of glycolysis 4- Clinical notes 5- Inherited enzyme deficiencies of glycolysis : i)Pyruvate Kinase deficiency ii) Lactic acidosis
6&7	b) TCA cycle 1- The reactions of the TCA cycle i) Oxidation of Acetyl CoA by the TCA cycle ii) Energy production by the TCA cycle 2- Synthetic function of the TCA cycle 3- Regulation of the TCA cycle:
8	Fructose & Galactose metabolism i) Disorders of Fructose metabolism ii) Disorders of Galactose metabolism
9&10	Glycogen metabolism i) Regulation of glycogen synthesis and degradation ii) Glycogen storage diseases
11	Blood glucose and its regulation i) Diabetes mellitus and Insulin metabolism ii) Hypoglycemia
12-15	PROTEIN METABOLISM - Fate of Ammonia - Urea: (normal values, uremia) - Amino acids as buffers - Serum protein components - Insulin structure - Selected inborn errors of amino acid metabolism
	Second course
1-4	LIPID METABOLISM - Oxidation of Fatty acids - Ketone bodies - Cholestrol metabolism - Lipoprotein metabolism - Atherosclerosis
5&6	NUCLEOTIDE METABOLISM - Disorders of Purines & Pyramidines metabolism - Uric acid synthesis & hyperuricemia
7&8	Hemoglobin synthesis and types Metabolism of hemoglobin
9,10&11	Electrolytes

12,13&14	Trace elements types Function and needed	
15	Toxicity	

203. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc	
204. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1- Lehninger. Principles of biochemistry 2- Lippincots . Biochemistry
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

225. **Program Vision**

- Establishing specialized medical laboratories

• Creating postgraduate studies (master's and doctorate) in pathological analysis specializations
• Hosting pathological analysis specialists from prestigious universities in the world in order to raise the academic level of graduates and place them in the ranks of colleges in prestigious universities.

226. **Program Mission**

The program mission is written here as stated in the university's catalog and website.

227. **Program Objectives**

1- The graduate must be proficient in the process of drawing blood and dealing with all laboratory samples, collecting and transporting them, with the ability to deal

with all laboratory equipment.

2 - The graduate must be proficient in microbiology examinations with the necessary knowledge of how to use all the necessary techniques to diagnose the bacterial causes of diseases and be able to give the correct opinion on this subject while conducting examinations in all branches of life, including viruses, fungi, parasites and bacteria.

3 - The graduate should be able to study clinical immunology and identify the immune mechanism responsible for the pathogenesis of common immune diseases. And to distinguish the different diagnostic methods as well as the important differential examinations for each disease and conduct them.

4 - The graduate should be able to practice basic skills in chemistry and be familiar with how to prepare solutions of different concentrations, in addition to diagnosing organic and life materials and conducting laboratory tests related to biochemistry, including hormones and others.

5 - The graduate must be proficient in the histology subject, prepare histological sections for that purpose, and conduct all partial tests, pathological parameters, and staining for histological sections.

6 - The graduate should be able to deal with what happens with blood transfusion and donation, diseases acquired through blood transfusion, and conduct all laboratory tests related to hematology.

7 - Its ability to deal with all modern technologies, including DNA analysis and forensic medicine

228. **Program Accreditation**

Does the program have program accreditation? And from which agency?

229. **Other external influences**

Quality Assurance Program of the Ministry of Higher Education and Scientific Research

230. **Program Structure**

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*

Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

231. Program Description

Credit Hours		Course Name	Course Code	**Year/Level**
practical	theoretical			
4	2	GeneralChemistry	**ML11**	First-year
4	2	Anatomy&MedicalTerminology	**ML12**	
4	2	Humanbiology	**ML13**	
3	1	Lab.Instrumentation	**ML14**	
--	2	MedicalEthics	**ML15**	
2	1	ComputerApplication	**ML16**	
--	1	Humanrights	**ML17**	
	1	EnglishLanguage	**ML18**	
4	2	MedicalMicrobiology	**ML21**	Second Year
4	2	ClinicalBiochemistry	**ML22**	
2	2	Humanphysiology	**ML23**	
2	2	Histology	**ML24**	
4	2	MolecularBiology	**ML25**	
4	2	Medicalparasitology	**ML26**	
	1	EnglishLanguage	**ML27**	
3	2	Histopathology	**ML31**	Third year
3	2	Hematology	**ML32**	
2	2	Virology& Mycology	**ML33**	
2	2	ClinicalChemistry	**ML34**	
3	2	Cytogenetic	**ML35**	
2	2	Immunology	**ML36**	
2	2	Advancedlaboratorytechnique	**ML37**	
2	1	ComputerApplication	**ML38**	
	1	EnglishLanguage	**ML39**	

4	2	ClinicalImmunology	**ML41**	Four year
4	2	DiagnosticMicrobiology	**ML42**	
4	2	AdvanceClinicalbiochemistry	**ML43**	
4	2	Parasitology	**ML44**	
4	2	Bloodtransfusion	**ML45**	
2	3	Histopathology	**ML46**	
	1	LaboratoryManagement	**ML47**	
	1	EnglishLanguage	**ML48**	
2	1	Biostatic	**ML49**	
5		Project	**ML410**	

232. **Expected learning outcomes of the program**	
Knowledge	
Knowledge and understanding The ability to apply knowledge of anatomy and identify different parts of the body	
Skills	
Developing the student's ability to think and extract information from books, lectures, and laboratories	
General and transferable skills (other skills related to employability and personal development.)	
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

233. Teaching and Learning Strategies

Method of giving lectures.
- Self-learning, discussion panels.
- Exercises and activities in the classroom, focusing on the practical and laboratory aspects.
- Directing students to some websites to benefit from them to develop their capabilities

234. Evaluation methods

- Participation in the classroom.
- Providing various activities.
- Not less than four semester written exams during the academic year, in addition to the theoretical final exam
And practical.
- Assignments and reports to solve questions in the form of extracurricular activities

235. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Laecture	Applied statistics	Applied statistics				

Professional Development

Mentoring new faculty members

Briefly describe the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

236. Acceptance Criterion

Central admission to the Ministry of Higher Education and Scientific Research)

237. The most important sources of information about the program

Student guide for central admission prepared by the Ministry of Higher Education and Scientific Research

238. Program Development Plan

Program Skills Outline																
				Required program Learning outcomes												
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

205. Course Name:	
Biostatistics	
206. Course Code:	
ML49	
207. Semester / Year:	
Second semester/2024	
208. Description Preparation Date:	
17\4\2024	
209. Available Attendance Forms:	
Official working hours	
210. Number of Credit Hours (Total) / Number of Units (Total)	
Number of hours (3) / Number of units (4)	
211. Course administrator's name (mention all, if more than one name)	
Name: M.Sc. Esmaeel Ali Hamad Assist. Proof. HayderRaaid Email:**Esmaeel.ali@alkutcollege.edu.iq**	
212. Course Objectives	
Course Objectives	**The study of biostatistics aims to teach the stud to use statistical methods in medical data and h to read medical reports statistically, as well as knowledge of reading medical reports that cont statistical graphs, in addition to studying a analyzing medical data.**
213. Teaching and Learning Strategies	
Strategy	- Self-learning, discussion panels. - Exercises and activities in the classroom, focusing on the practical and laboratory aspects. - Directing students to some websites to benefit from them to develop their capabilities. - Solving problems as extracurricular assignments

214. Course Structure

Week	Subject
1	**Introduction to biostatistics?**
2	**Statistical notations**

3	**Frequency distribution table**
4	**Relative and percentage frequency distribution table**
5	**Cumulative frequency distribution**
6	**Arithmetic Mean**
7	**Geometric Mean**
8	**Harmonic Mean**
9	**Quadratic Mean**
10	**The Median**
11	**The Mode**
12	**The Range**
13	**The Mean Deviation**
14	**Variance and Standard Deviation**
15	**Coefficient of Variation**
16	**Standardized Scores**
17	**Correlation**

215. Course Evaluation

Participation in the classroom.
Providing various activities.
- Not less than four written semester exams during the academic year, in addition to the theoretical final exam
And practical.
- Assignments and reports to solve questions in the form of extracurricular activities.

216. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	