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

Al-huda University College

Academic Description

Medical Laboratory Technology Program

2026 – 2025

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.

Academic Program Description

The Medical Laboratory Technology (MLT) program trains students with the theoretical knowledge, technical skills, and professional attitudes required to perform laboratory analyses that aid in the diagnosis, treatment, and prevention of disease. This program combines classroom instruction with practical laboratory training to develop competencies in clinical laboratory procedures.

Course Description

This course provides students with foundational and advanced knowledge required to function effectively as Medical Laboratory Technicians in clinical settings. It covers the principles and procedures of laboratory analyses used in the diagnosis and treatment of diseases. Emphasis is placed on the theoretical background, practical skills, and quality assurance required in major laboratory disciplines, including:

- **Clinical Chemistry:** Analysis of body fluids to assess organ function and metabolic states.
- **Hematology:** Study of blood cells and coagulation to diagnose blood disorders.
- **Microbiology:** Identification and characterization of microorganisms causing human disease.
- **Immunology and Serology:** Principles of immune responses and laboratory testing for antigen-antibody reactions.
- **Blood Banking (Immunohematology):** Techniques for blood typing, cross matching, and transfusion services.
- **Urinalysis and Body Fluids:** Examination of urine and other body fluids for diagnostic purposes.
- **Medical Genetics:** Medical genetics helps us understand how variations and mutations in genes cause inherited disorders, predispose individuals to diseases, or affect their severity and prognosis.

- **Parasitology:** Identification of medically important parasites.
- **Laboratory Management and Safety:** Quality control, laboratory operations, infection control, and regulatory compliance.

Students will gain hands-on experience through laboratory sessions and clinical practicum in accredited healthcare laboratories. The course also focuses on developing professional behaviour, ethical practices, communication skills, and critical thinking required to provide high-quality laboratory services in patient care.

Curriculum Structure

All courses for the academic program are attached herewith.

Learning Outcomes

Upon successful completion of the Medical Laboratory Technology program, graduates will be able to:

1. **Demonstrate knowledge of basic and advanced concepts** in clinical laboratory sciences, including hematology, clinical chemistry, microbiology, immunology, parasitology, and blood banking.
2. **Perform laboratory procedures competently and safely**, following standard operating protocols and quality control measures.
3. **Operate, calibrate, and maintain laboratory instruments and equipment** effectively to ensure accuracy and reliability of results.
4. **Analyze and interpret laboratory data critically** to support clinical diagnosis and patient management.
5. **Apply principles of laboratory safety, infection control, and waste management** to protect self, colleagues, and the environment.
6. **Demonstrate professional behavior and ethical practice** in all aspects of laboratory work.
7. **Communicate effectively** with healthcare team members, patients, and the community regarding laboratory services and results.

8. **Engage in problem-solving and critical thinking** to address technical or analytical challenges in the laboratory.
9. **Participate in continuous professional development and research activities** to keep up with advancements in medical laboratory science.
10. **Work effectively as part of a multidisciplinary team**, demonstrating responsibility, leadership, and collaboration skills.

Teaching and learning strategies

The Medical Laboratory Technology program employs a variety of teaching and learning strategies to ensure students acquire the necessary knowledge, technical skills, and professional attitudes required for effective laboratory practice. These strategies include:

1. Lectures and Interactive Classes

To deliver core theoretical knowledge in subjects such as hematology, microbiology, immunology, medical genetics, and clinical chemistry, supported by discussions and questioning to enhance understanding.

2. Practical Laboratory Sessions

Hands-on training in laboratory techniques, equipment use, and diagnostic procedures to develop technical competence and confidence in performing analyses.

3. **Problem-Based Learning (PBL)**

Small group activities where students analyze case studies to enhance critical thinking, problem-solving skills, and application of knowledge to clinical scenarios.

4. **Demonstrations**

Instructors demonstrate laboratory procedures and equipment handling before students perform tasks independently, ensuring correct technique and safety adherence.

5. **Clinical Practicum / Internship**

Supervised training in affiliated hospitals and diagnostic laboratories to apply learned skills in real healthcare settings, integrate with healthcare teams, and gain professional experience.

6. **Tutorials and Remedial Sessions**

Targeted sessions to reinforce learning, clarify difficult concepts, and support students needing additional guidance.

7. **Seminars and Presentations**

Student-led seminars to build communication skills, professional confidence, and mastery of specific topics through literature review and presentation.

8. **E-learning and Multimedia Resources**

Integration of online platforms, virtual labs, videos, and simulations to enhance understanding of complex laboratory procedures and theoretical concepts.

9. Research Projects and Assignments

Engagement in small research projects or assignments to develop scientific inquiry, data analysis, and academic writing skills.

10. Assessment and Feedback

Regular formative and summative assessments with constructive feedback to monitor progress and improve performance continuously.

Academic Program Description Form

University Name: Al-Huda University College

Scientific Department: Medical Laboratory Technology

Academic or Professional Program Name: Medical Laboratory Technology

Final Certificate Name: Bachelor of Medical Laboratory Technology

Academic System: Courses

Description Preparation Date: 17-7-2025

File Completion Date: 20-7-2025

Signature
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Professor,Ph.D. Louay Mohmmed Abdu
Date: 2025/7/20

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Date: 2025/7/20

Reviewed by
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Name of QA Manager: MS.c. Mushtaq Mohammed Abdulnabi
Date: 2025/07/20

Signature:

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Dean
2025/7/20

1. Program Vision

The Department of Medical Laboratory Techniques aspires to be one of the fundamental scientific departments that contribute to enhancing the healthcare system in Iraq, achieving leadership at the local, regional, and international levels in higher education, scientific research, and community service.

The department seeks excellence in medical analyses, laboratory diagnosis of diseases, and the performance of various laboratory tests with high efficiency, advanced techniques, and precise accuracy. It aims to assume responsibility and actively contribute to improving the national health sector and raising scientific competence based on modern and advanced foundations that keep pace with global technological progress..

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2. Program Mission

The mission of the Medical Laboratory Techniques Department is **to** collaborate and integrate with all staff members, promoting teamwork that is essential to comprehensively achieve the vision of the scientific department through continuous monitoring of scientific developments in the fields of laboratory analysis and related specialties. The department is also committed to updating academic curricula to meet labor market requirements, ensuring the continuity of graduates' professional qualifications, and enabling them to secure suitable employment opportunities.

3. Program Accreditation

No. The Medical Laboratory Techniques program is not accredited.

4. Other external influences

Is there a sponsor for the program?

No:

The Medical Laboratory Technology program **does not have an external sponsor**. It is fully funded and operated by a **private foundation** as part of its allied health education programs, which provide support through **funding, equipment, clinical training sites, and student scholarships.**

5. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements				
College Requirements	**199**	**63**		**Basic**
Department Requirements	**199**	**63**		
Summer Training	**Yes**			
Other				

6. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
Same as in the field Skill outline			**Theoretical**	**Practical**

7. Expected learning outcomes of the program	
Knowledge	
Upon completion of the Medical Laboratory Techniques , graduates will be able to demonstrate: 1. Enable students to study specialized topics related to medical laboratory sciences. 2. Train students to prepare and perform various procedures used in medical laboratories.	3. Equip students with the skills to handle patients and properly receive specimens for laboratory use. 4. Develop students' ability to interpret laboratory results and assess their correlation with clinical diagnoses.
Skills	

1-Use laboratory equipment and instruments efficiently in medical laboratories. 2-Train students to operate laboratory devices independently.	3-Perform various laboratory techniques accurately and professionally. 4-Draw blood samples from patients safely and correctly.
Ethics	
Knowledge of professional ethics, legal aspects, and regulatory standards **governing medical laboratory practice.**	

8. Teaching and Learning Strategies

The Medical Laboratory Techniques Department adopts diverse and student-centered teaching and learning strategies to ensure graduates achieve the required competencies for professional practice. These include:

1. **Didactic Lectures:**
   Systematic delivery of theoretical knowledge using interactive lectures supported by audiovisual aids to enhance understanding of key concepts in medical laboratory sciences.
2. **Practical Laboratory Sessions:**
   Intensive hands-on training in laboratory techniques, procedures, and instrumentation under close supervision to develop technical skills and confidence.
3. **Demonstrations:**
   Instructor-led demonstrations of laboratory procedures and equipment use to ensure correct techniques and safety practices before student application.
4. **Problem-Based Learning (PBL):**
   Case-based discussions and group problem-solving activities to foster critical thinking, analytical skills, and application of theoretical knowledge to clinical scenarios.
5. **Clinical Practicum / Internship:**
   Structured placements in accredited hospitals and diagnostic laboratories where students apply learned skills in real patient care settings, integrate

with laboratory teams, and gain professional experience.

6. **Seminars and Student Presentations:**
   Preparation and presentation of topics by students to enhance communication skills, confidence, and in-depth understanding of specific laboratory subjects.
7. **E-learning and Multimedia Resources:**
   Utilization of online learning platforms, virtual labs, digital simulations, and recorded demonstrations to support and extend classroom learning.
8. **Research Projects and Assignments:**
   Engagement in research projects, literature reviews, and scientific assignments to cultivate inquiry-based learning, data analysis skills, and academic writing.
9. **Continuous Assessment and Feedback:**
   Regular formative and summative assessments with timely, constructive feedback to monitor student progress, identify learning gaps, and guide improvement.

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9. Evaluation methods

Evaluation Methods in the Medical Laboratory Technology Department

To ensure students achieve the program's learning outcomes and professional competencies, the following evaluation methods are employed:

1. **Written Examinations:**
   - Midterm and final exams include multiple-choice questions (MCQs), short-answer questions (SAQs), and essay questions to assess theoretical understanding.
2. **Practical Examinations:**
   - Hands-on assessments where students perform laboratory procedures to demonstrate technical skills, accuracy, and adherence to safety protocols.
3. **Objective Structured Practical Examinations (OSPE):**
   - Station-based evaluations assessing specific skills, techniques, and problem-solving abilities in laboratory settings.
4. **Quizzes and Class Tests:**
   - Frequent short assessments to reinforce learning, ensure continuous study, and identify areas needing improvement.
5. **Assignments and Reports:**
   - Individual or group assignments, laboratory reports, and research reviews to evaluate understanding, writing skills, and ability to analyze and interpret scientific data.
6. **Case Study Analysis:**

- Evaluation of students' ability to integrate theoretical knowledge with practical application through clinical case discussions and written analyses.

7. **Seminar Presentations:**
   - Assessment of presentation skills, depth of topic understanding, and ability to communicate scientific information effectively.
8. **Clinical Practicum Evaluation:**
   - Assessment of student performance during clinical training by supervising laboratory professionals, focusing on technical competencies, professionalism, and communication skills.
9. **Project Work:**
   - Evaluation of research projects or literature reviews based on objectives, methodology, analysis, and presentation of findings.
10. **Participation and Professional Behaviors:**
    - Continuous assessment of attendance, punctuality, teamwork, ethical conduct, and active participation in laboratory and class activities.
11. **Comprehensive Exit Examination:**
    - A final integrated exam covering all major disciplines to assess overall readiness for professional practice and certification examinations.

10.Faculty

Faculty Members

Academic Rank	**Specialization**		**Special Requirements/Skills (if applicable)**		**Number of teaching staff**	
	General	**Special**			**Staff**	**Lecturer**
Professor	Biology	Human Genetics			1	
Assistant Professor	Biology	Microbiology			1	
Assistant Lecturer	Veterinary	Anatomy			1	
Assistant Lecturer	Cell Biology				1	2

Lecturer Lecturer Assistant Lecturer	Biology Chemistry Biology	Microbiology Biochemistry Microbiology				2 3

Professional Development
Mentoring new faculty members
Professional Development **Guidance for New Faculty Members** 1- Course on teaching methods 2- Through workshops, seminars, and discussion sessions 3- Training courses on teaching skills and strategies
Professional development of faculty members
Professional Development for Faculty Members 1- Attending postgraduate thesis defenses. 2- Participating in local and international training courses. 3- Participating in local and international scientific conferences. 4- Conducting and publishing scientific research in reputable journals. 5-Delivering regular seminars in their fields of specialization.

11.**Acceptance Criterion**
Applicants seeking admission to the Medical Laboratory Technology program must meet the following criteria: 1. **Academic Qualifications:** o Successful completion of **secondary education (high school diploma- Biology- Practical)** or equivalent with a focus on science subjects. o Minimum required grades in **sciences**, as per national admission standards established by the Ministry of Higher Education. (Minimum scorers are as specified for this program.) BSc and the study in English for four years

12. The most important sources of information about the program

Most Important Sources of Information about the Medical Laboratory Technology Program

1. **Official Program Handbook / Prospectus**
    - Provides detailed information about the curriculum, course descriptions, program objectives, learning outcomes, policies, and requirements.
2. **University or College Website**
    - The primary up-to-date source for admission criteria, tuition fees, faculty contacts, application deadlines, and announcements.
3. **Faculty and Academic Advisors**
    - Direct guidance from program coordinators, department heads, and teaching faculty helps clarify academic expectations and career paths.
4. **Student Services and Admissions Office**
    - Provides official information about the application process, required documents, scholarships, and financial aid.
5. **Program Curriculum Guides and Syllabi**
    - Detailed outlines of courses, credit hours, practical training components, assessment methods, and graduation requirements.
6. **Clinical Training Sites / Affiliated Hospitals**
    - Information about the hospitals or labs where students complete their internships, including training standards and partnership agreements.
7. **Program Alumni and Current Students**
    - Alumni networks and current students provide valuable insights into program strengths, faculty quality, campus life, and job placement opportunities.
8. **Research Publications and Institutional Reports**

- Annual reports, program self-studies, or quality assurance reviews highlight program performance and development plans.

9-Open Days and Orientation Events

- Campus tours, open house days, and orientation sessions are key for prospective students to gather information and ask questions directly.

10-Official Social Media and Communication Channels

- Program or department social media pages, newsletters, and official email updates provide news, events, and important deadlines.

13.Program Development Plan

Key Components of a Medical Laboratory Technology Program Development Plan

1. **Program Rationale and Needs Assessment**
   - Justifies the establishment or revision of the program based on **community health needs, workforce demand, and stakeholder input**.
2. **Learning Outcomes and Competency Framework**
   - Defines specific **graduate competencies and learning outcomes** required for professional practice as MLTs.
3. **Faculty Recruitment and Development**
   - Plans for hiring qualified faculty and providing **continuous professional development and mentorship programs**.
4. **Student Admission Criteria and Policies**
   - Defines **eligibility criteria, selection process, and student support systems**.
5. **Assessment and Evaluation Strategies**
   - Describes **methods to assess student performance**, prog ram effectiveness, and quality assurance mechanisms.
6. **Clinical Training and Industry Partnerships**
   - Details arrangements with **hospital laboratories, diagnostic centers, and external stakeholders** for clinical practicum and internships.
7. **Accreditation and Regulatory Compliance**
   - Plans for meeting **national and international accreditation standards** and licensure requirements for graduates.
8. **Quality Assurance and Continuous Improvement**
   - Includes monitoring systems, **feedback mechanisms from students, faculty, and employers**, and regular program reviews for ongoing improvement.
9. **Budget and Financial Planning**
   - Estimates costs related to **program implementation, equipment procurement, faculty salaries, and operational sustainability**.
10. **Implementation Timeline**
    - Provides a detailed **schedule for program rollout, development phases, and evaluation milestones**.
11. **Risk Management and Sustainability Plan**
    - Identifies potential challenges and outlines strategies to ensure **long-term program viability and relevance**.

The Program Development Plan serves as a **blueprint to guide administrators, faculty, and stakeholders** in establishing and maintaining a high-quality MLT program that produces competent graduates to meet healthcare system demands.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A 4	B1	B2	B 3	B4	C1	C2	C3	C4
1st year/1st Semester		General Chemistry 1	Basic	*	*	*			*	*			*		*
		Medical terminology	Basic	*	*				*		*	*	*		
		Laboratory instruments	Basic	*	*	*			*			*			
		Medical ethics	Basic	*	*	*			*		*	*	*		
		Computer Applications	Basic	*	*					*		*	*		
		Human Rights and Democracy	Basic	*	*		*		*	*		*	*		*
		English language	Basic	*	*				*	*		*	*		
1st year/2nd		General Chemistry 2	Basic	*	*	*			*	*			*		*

Semester															
		Anatomy	Basic	*	*		*		*	*	*		*	*	
		Human biology	Basic	*	*	*			*			*		*	*
		Laboratory instruments 2	Basic	*	*	*						*			
		Computer Applications 2	Basic	*	*			*	*	*		*	*		
		Arabic language	Basic	*	*	*		*		*	*	*	*		*
2nd year/1st Semester		Medical Bacteriology 1	Basic	*	*		*	*		*	*		*	*	
		Biochemistry 1	Basic	*				*				*			
		Human Physiology 1	Basic	*				*				*			
		Molecular Biology	Basic	*		*	*	*			*		*		*

		Medical Parasitology 1	Basic	*	*	*		*			*	*		*	*
		Histology 1	Basic	*				*				*			*
		Crimes of the Ba'ath regime in Iraq	Basic	*	*			*	*		*	*	*	*	
2nd year/1st Semester		Medical Bacteriology 2	Basic	*	*			*					*		
		Biochemistry 2	Basic	*				*				*			
		Human Physiology 2	Basic	*				*				*			
		Molecular Biology	Basic	*				*				*			
		Medical Parasitology 2	Basic	*				*					*		
		Histology 2	Basic	*				*					*		
		Descriptive Biostatics	Basic	*	*			*		*	*	*	*	*	

		Arabic Language	Basic	*	*		*		*		*		*		*
3rd Year/1st Semester		Histopathology 1	Basic	*		*		*		*		*	*	*	
		Hematology 1	Basic	*	*		*	*		*	*		*	*	*
		Metabolic Disorders	Basic	*				*				*			
		Medical Genetics1	Basic	*	*	*		*			*		*	*	
		Immunology 1	Basic	*				*				*			
		Advanced Laboratory Techniques	Basic	*		*	*		*		*		*	*	
		Computer Applications 1	Basic	*				*				*			
3rd Year/2nd		Histopathology 2	Basic	*		*		*		*		*	*	*	

Semester															
		Hematology 2	Basic		*					*				*	
		Medical Virology	Basic		*	*		*			*		*		*
		Medical Genetics2	Basic	*	*	*		*				*	*	*	
		Immunology 2	Basic	*				*				*			
		Clinical Endocrinology	Basic	*				*				*			
		Computer Applications 2	Basic	*				*				*			
		Analytical Biostatistics	Basic	*				*				*			
4th Year/1st Semester		Clinical Immunology1	Basic	*	*	*			*		*	*		*	
		Diagnostic	Basic	*		*	*		*	*		*	*		*

		Bacteriology1													
		Clinical Enzymology	Basic	*				*					*		
		Diagnostic Parasitology1	Basic	*		*	*		*	*		*	*		*
		Blood Transfusion	Basic	*	*		*	*		*	*		*	*	
		Pathology	Basic	*				*					*		
		Professional Ethics	Basic	*				*				*			
		Research Methods	Basic		*	*		*		*		*	*		*
4th Year/1st Semester		Clinical Immunology2	Basic	*	*	*			*		*	*		*	
		Diagnostic Bacteriology2	Basic	*		*	*		*	*		*	*		*
		Stem cell & Embryology	Basic	*				*				*			

		Diagnostic Parasitology2	Basic	*		*	*		*	*		*	*		*
		Clinical Chemistry	Basic	*		*		*	*			*			*
		Antibiotic Resistance & Infection Control	Basic	*				*				*			
		Laboratory Management	Basic	*				*				*			*
		Graduation Project	Basic		*	*	*		*		*	*		*	*

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