

MANUAL OF DEPARTMENT OF MEDICAL LABORATORY SCIENCES

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Message from the Head of the Department:

The Medical Laboratory Sciences (MDL) program, nationally known for its excellent and realistic education, provides traditional courses as well as extensive experience in actual clinical laboratories. Program's lectures and labs provide students with a substantial knowledge base as well as fundamental skills and techniques. Students are challenged to critically examine all data and results and to be alert for potential technical errors. Students are actively involved in discussions relating theory to tests results, and perform detailed lab write-ups, which also help to correlate laboratory findings with theory. The facilities are modern and well equipped for this purpose. Here, students receive instruction using actual clinical specimens in a laboratory environment. Finally, in the affiliate laboratories, students continue to develop understanding of principles, mastery of basic skills and professionalism. The MDL Program staff participates in a wide variety of activities within the department and professional community.

Dr. Mohammad Alaidarous

Head of the Medical Laboratory Sciences

About the Department:

In 2005, The Department of Medical Laboratory Sciences (MDL) was established as the department of Laboratory Sciences at the College of Science – Al Qassim University at Zulfi city. When MU was established in 2009, the College of Science was merged to be one of its colleges. Since 2009 the department of Laboratory Sciences became one of CAMS departments as the MDL department. Nevertheless, the department of Laboratory Sciences curriculum was continued to be taught until the new modified curriculum came in 2012. A collaboration has been established between CAMS and the College of Science, stating that all teaching responsibilities for MDL students at Zulfi campus carried out by academics from the College of Science.

In addition, institutions involved in the study program are local and regional governmental hospitals. The memorandum of understanding was established between the Ministry of Higher Education and Ministry of Health that allows governmental Universities to use all clinical facilities of those hospitals for training purposes of their enrolled students as well as for student interns (Appendix 1: the memorandum of understanding between the Ministry of Higher Education & the Ministry of Health).

Program Identification and General Information: Bachelor

Program title and code: Bachelor of Medical Laboratory Sciences (MLS)		
Name of the College: College of Applied Medical Sciences		
Award granted on completion of the program: Bachelor of Medical Laboratory Sciences (MLS)		
Total credit hours needed for completion of the program: 140 Credit hours		
Date of approval by the authorized body (Ministry of Education for private institutions and Council of Higher Education for public institutions)		
Campus Branch/Location	Approval By	Date
Main Campus: Majmaah campus		
Majmaah Male Campus	Council of Higher Education	14/02/1446
Majmaah Female Campus	Council of Higher Education	14/02/1446
Person responsible for the program: Dr. Mohammad Alaidarous, Head of the		

Department

Importance of the program:

The program was established to cater the community needs of professional and highly skillful specialists in the field of medical laboratory sciences for diagnosis and research services.

The mission of Program:

Qualifying outstanding cadres scientifically, practically and ethically in the field of medical laboratories to provide health and research services for the community through an appropriate academic environment.

The vision of Program:

Excellency in education, research and community service in the field of clinical laboratory sciences

Program Objectives:

1. Meet the demand for a qualified and skilled lab specialist in the market.
2. Prepare students for careers that will benefit communities.
3. Enhancing the learning environment and facilities to meet national and international academic standards.
4. Encourage scientific research among undergraduate and graduate students

Program learning outcomes:

Program learning Outcomes*	
Knowledge :	
K1	Define the fundamentals of the current trends and theories in biomedical sciences.
K2	Recall knowledge accumulation in biomedical sciences which can be utilized in diagnostic laboratories.
K3	State the most important aspects while planning and designing research methodologies.
Skills	
S1	Formulate research strategies and experiments to solve social issues using basic and applied biomedical principles.
S2	Assess biomedical principles and experimental findings for troubleshooting in infectious diseases.
S3	Conduct the experimental findings and diagnostic tests in medical laboratory sciences.

S4	Interpret, and report the experimental outcomes in medical Laboratory sciences.
S5	Communicate effectively through oral presentations and/or written reports.
Values	
V1	Apply scientific ethics and professional standards.
V2	Identify complex problems and resolve them independently or in a group.

Program Identification and General Information: Master

Program title and code: Master of Science in Clinical Laboratory
Name of the College: College of Applied Medical Sciences
Award granted on completion of the program: Master of Science in Clinical Laboratory
Total credit hours needed for completion of the program: 39 Credit hours
Tracks: Clinical Biochemistry Clinical Microbiology Clinical Haematology
Person responsible for the program: Dr. Mohammad Alaidarous, Head of the Department

Program Learning Outcomes: Master of Science in Clinical Laboratory

Program Learning Outcomes:*	
Track: (Clinical Biochemistry)	
Knowledge and Understanding:	
K1	Students demonstrate a detailed knowledge of specific areas in the field of clinical biochemistry.
K2	Students employ scientific knowledge on clinical biochemistry diagnostic procedures.
Skills:	
S1	Students design experiments and/or research strategies in the field of clinical biochemistry.
S2	Students develop ideas through the evaluation of literature, concepts and principles in the field of clinical biochemistry.
S3	Students analyze clinical biochemistry scientific data and/or formulate publishable manuscript.
S4	Students illustrate effective means of oral, written and/or poster scientific communication in the field of clinical biochemistry
Values, Autonomy, and Responsibility:	
V1	Students apply ethical and legal issues in the field of clinical biochemistry.

V2	Students practice effective leadership, teamwork and/or independence skills in the field of clinical biochemistry.
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Track: (Clinical Microbiology)

Knowledge and Understanding:

K1	Students demonstrate a detailed knowledge of specific areas in the field of clinical microbiology.
K2	Students employ scientific knowledge on clinical microbiology diagnostic procedures.

Skills:

S1	Students design experiments and/or research strategies in the field of clinical microbiology.
S2	Students develop ideas through the evaluation of literature, concepts and principles in the field of clinical microbiology.
S3	Students analyze clinical microbiology scientific data and/or formulate publishable manuscript.
S4	Students illustrate effective means of oral, written and/or poster scientific communication in the field of clinical microbiology.

Values, Autonomy, and Responsibility:

V1	Students apply ethical and legal issues in the field of clinical microbiology.
V2	Students practice effective leadership, teamwork and/or independence skills in the field of clinical microbiology.

Track: (Clinical Haematology)

Knowledge and Understanding:

K1	Students demonstrate a detailed knowledge of specific areas in the field of clinical haematology.
K2	Students employ scientific knowledge on clinical haematology diagnostic procedures.

Skills:

S1	Students design experiments and/or research strategies in the field of clinical haematology.
S2	Students develop ideas through the evaluation of literature, concepts and principles in the field of clinical haematology.
S3	Students analyze clinical haematology scientific data and/or formulate publishable manuscript.
S4	Students illustrate effective means of oral, written and/or poster scientific communication in the field of clinical haematology.

Values, Autonomy, and Responsibility:

V1	Students apply ethical and legal issues in the field of clinical haematology.
V2	Students practice effective leadership, teamwork and/or independence skills in the field of clinical haematology.

Department Structure and Organization:





MDL Department's Committees:

1. Academic Accreditation Committee
2. Guidance counseling and students right committee
3. Planning and Development committee
4. Practical and Training committee
5. Innovation and Entrepreneurship committee
6. Faculty affairs committee
7. Laboratory committee
8. Alumini committee
9. E-learning committee
10. Volunteer and community service committee
11. Measurement and Evaluation committee









1. Academic accreditation Committee

1.1 Introduction

The academic accreditation committee plays an important role in achieving the mission of the collage and program strategic plan. In accordance with the aforesaid the committee is proceeding confidently towards the excellence and academic accreditation of the MDL program. In this regards, the quality committee seeks continuous development with the application of quality management systems in the departments to achieve a number of objectives:

-  Academic accreditation locally and internationally.
-  Development of the faculty and staff members.
-  Spread the culture of quality assurance and development among the faculty members.
-  Ensure the application of quality in the department and measure the results of their application in administrative and academic work.

1.2 Tasks and Duties:



-  To monitor and enforce standards to enhance the quality of practice and reduce incompetence.
-  To prepare/review the course specification, course reports, course portfolio for both bachelor and master programs.
-  To review benchmarks and KPIs reports for both bachelor and Master program.
-  Create different working groups to handle specific accreditation standards or problem/improvement issues.
-  To submit regular reports to the Programs' Quality Assurance and Academic Accreditation unit.
-  To identify areas those need improvement and propose the appropriate solutions.
-  Organize a meeting with stakeholders through the advisory board.
-  Implement workshops and quality learning sessions for faculty members.

2. Guidance counseling and students right committee

2.1 Introduction

The guidance counseling and students right committee of MDL department is committed to provide excellent academic, educational and counselling services to all students. Additionally, guiding students, and solving issues related to academic achievement.

2.2 Tasks and Duties

-  Follow up on early registration, confirm registration, and follow up on male and female students during the early registration period to discover errors that may occur and solve problems that may interfere with the registration process.
-  Prepare the study schedules for the male and female sections.








- ✚ Activate and apply academic counselling and solving issues related to academic achievement.
- ✚ Follow up on students' attendance and consider students' excuses for absence and non-attendance for exams, as well as looking into requests for apologies for studying.
- ✚ Counting the number of students who exceeded the allowed limit in absence (25%), in preparation for depriving them of entering the final exams for each semester.
- ✚ Preparing the final exams schedule for each semester.
- ✚ Supervising the course equivalency process.
- ✚ Spreading awareness of academic regulations among students, and helping them understand study plans.
- ✚ Provide forms for course add/drop/withdrawal and change of section.
- ✚ Follow-up of all student cases from postponement, apology, transfer, change of specialization, and defaulting students.
- ✚ Notify the student when his academic average is low, and sign the academic warnings.

3. Planning and Development committee

3.1 Introduction

The planning and development Committee aims to develop innovative and reliable curriculum. This is achieved by covering the necessary concepts, knowledge and skills medical laboratories sciences. Additionally, committee is to review, monitor, evaluate and continuously improve the MDL curriculums and study plans to ensure high quality curriculums for all courses are conducted in the department. The committee designs and suggests recommendations and revisions for courses based on the inputs gathered from quality assurance unit, students and faculty.

3.2 Tasks and Duties














-  Coordination of department activities and community service, courses, initiatives, national & international days.
-  Process academic advising applications.
-  Regular meetings and contacts between the students and their academic advisors.
-  Arrange visits to the secondary schools to increase the knowledge about the program.
-  Encourage the students to join the annual university prizes for extracurricular activities – based competitions.
-  Encourage the students to document their extracurricular activities in their skills record.
-  Participation of faculties in the activities of community service.

4. Practical and Training committee

4.1 Introduction

The Practical and Training committee of MDL department is committed to ensuring the quality and smooth performance of the clinical training program for MDL students to complete the internship year successfully. Additionally, arranging frequent hospital visits for students from different academic levels for diagnostic/research laboratories demonstration in different Kingdom hospitals and research centers, and to improve students' communication and practical skills, follow up graduated students.

4.2 Tasks and Duties








-  Process internship applications, prepare and issue letters based on the required training sites.
-  Create database for interns/graduated students.
-  Follow up interns during internship year.
-  Coordinating of hospital visits.
-  Coordination of training courses to prepare students for internship
-  Coordination of training session for SCHS classification exam.
-  Update and implement guidelines and policies for the clinical training for internship year approved by the Clinical training units in the CAMS.
-  Ensure the quality of the clinical training to meet national and international accreditation standards.
-  Organizing periodic meetings to plan and review the clinical training policies and guidelines to improve skills that deliver learning outcomes for students.
-  Review and update the clinical training manual for internship year.
-  Organizing clinical training program (workshop- training courses) schedule.
-  Follow up graduated students' percentage of successfully completed their internship/graduated and conduct further studies or employed.
-  Develop quantitative evaluation methods, to ensure quality and outcomes of graduated MDL students.

5. Innovation and Entrepreneurship committee

5.1 Introduction

The scientific Research Unit is to provide a distinctive research environment among the faculty members which helps in developing the skills of innovation, high quality and creative research that positively impacts on the social, educational and healthcare needs of the society.

5.2 Tasks and Duties





-  Enhancing the activities of college and developing its capabilities in the field of scientific research.
-  Preparing the operational plan for scientific research and emphasizing its implementation mechanisms among the academic departments of college.
-  Maximizing the scientific research outputs from the faculty.
-  Coordinating with Deanship of Scientific Research, and scientific research, and research centres in in the University for procuring research funds for the faculty.
-  Increasing the level of collaborative and interdisciplinary research nationally and internationally.
-  Implementation of any directives by the Vice-Dean for graduate studies and scientific research. Follow up graduated students' percentage of successfully completed their internship/graduated and conduct further studies or employed.
-  Develop quantitative evaluation methods, to ensure quality and outcomes of graduated MDL students.

6. Faculty affairs committee

6.1 Introduction

The Faculty affairs Committee is a committee of the MDL department. Its responsibilities are towards the selection of qualified faculty & recruitment, training and development and scholarship with all relevant applicable laws. It also advises on the employment arrangements and required allowances/awards & deanship annual prize applications processing.

6.2 Tasks and Duties








-  Reviewing the promotion files.
-  Announcing vacant academic jobs
-  Sorting and interviewing applicants for academic positions.
-  Reviewing of applicants for a master's program & conducting interviews.





7. Laboratories Committee

7.1 Introduction

Laboratories & Equipment Committee is responsible for ensuring laboratory facilities at Department of medical laboratories are meets the requirements for teaching and efficient laboratory practices. In MDL department we have five laboratories including: Hematology lab, Histology lab, Biochemistry lab, Anatomy & Physiology, and Microbiology lab.

7.2 Tasks and Duties

-  Maintain laboratory and laboratory equipment (daily, weekly, and monthly).
-  Apply safety requirements.
-  Coordination of practical lectures – (practical scheduling for each lab)
-  Create records for chemicals and glassware classification.
-  Keep the main stock and inventory for consumable and book is constantly updated.
-  Order reagents, laboratory teaching and demonstration tools upon faculty members' request.
-  Updating relevant laboratories policies and regulations.







-  Review and update standard operating procedures for laboratories (SOPs).
-  Regular meetings with all members of the committee to ensure proper use of laboratories.
-  Prepare a list of laboratory requirements for MDL department annually.
-  Keep records of all laboratory documents and report to the Quality & program Committee.

8. Alumni committee

8.1 Introduction

Alumini committee is responsible for ensuring the communication between graduates and the program and society and to cooperate with graduates in the development and refinement of educational programs of the department for the benefit of students and community.

8.2 Tasks and Duties








-  Provide graduates with academic and research updates and the various activities of the program and communicate with them through the database of graduates prepared by the unit.
-  Evaluation of the content of educational programs and curricula in the program and the work of feedback by filling the questionnaire by the graduates and the extent of the contribution of these programs to their practical success.
-  Survey the views of graduates and alumni on the effectiveness and compatibility of educational programs in program to the needs of the labor market.
-  A relative inventory of the number of graduates working in the field of major and non-major , as well as non-working ones to see the effectiveness of programs in the labor market.
-  Prepare an annual report on the status of graduates at the program level.
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9. E- Learning Committee

9.1 Introduction

E- learning committee is responsible to facilitate student and faculty with diversified educational resources of international standard in order to enhance effective learning and teaching.

9.2 Tasks of the Committee





-  Set an annual work plan for the unit's activities.
-  Coordinate electronic tests for students.
-  Supervise the process of booking laboratories during the semester and final exams.
-  Set a timetable for invigilators during exam.
-  Write down the names of absent students and check their excuses to conduct a make-up exam
-  Submit a completion report to the department's Quality Unit.
-  Undertake any assigned tasks.



10. Volunteer and community service committee

10.1 Introduction

The Community Service Committee works on providing community services and voluntary activities to meet the needs of the local community. This is achieved through developing and implementing plans for community service activities and promoting community participation among the department's members.

10.2 Tasks and Responsibilities of the Committee

-  Preparing the annual operational plan for the committee according to the specified templates, with continuous monitoring of the implementation of the plan's projects and tracking its indicators.
-  Attracting ideas and initiatives and encouraging all program members to participate in community service.
-  Organizing and documenting community service activities and developing them.
-  Evaluating the program's participation in community service activities and events.

-  Preparing progress reports and an annual report on the implementation of the operational plan, including an improvement plan for the following year.
-  Accomplishing all tasks assigned to the committee related to its responsibilities, studying all matters referred to it, and submitting appropriate proposals regarding them.

Academic Counseling

The academic regulations are the framework and rules of a study course. This legal document describes how the Health Informatics program is structured, how students are assessed and what requirements have to be fulfilled to successfully graduate with a Bachelor degree. Academic Advising is an essential and central element in the educational system, it is an objective response to the economic, humanitarian and social variables built into the system and philosophy of education, as well as being responsive to the needs of the student to Communicate with university education, which represents a necessary national development to achieve humanity innovation and excellence requirements.

Tasks of the Academic Advising Unit Coordinator There are an academic advising unit in each faculty headed by a member of the faculty staff. Such coordinator has the following tasks:

1. General supervision of the work of academic advisors and follow up the cases referred to him/her.
2. Welcome new students on the first day of study and introduce them to the university regulations.
3. Allocate students in a fair manner between faculty staff taking into consideration all psychological, social and linguistic factors. Student's Handbook (Dept. of MDL)
4. Receive reports about students' issues in addition to the reports sent by the academic advisors, solve their problems or refer them to Vice Dean for Academic Affairs or to Dean if needed.
5. Organize counselling meetings, seminars and workshops to advance the academic advising efforts.
6. Facilitate the tasks of the academic advisors and prepare students' files and forms.
7. Discuss with the faculty council (the Dean or heads of departments) all new developments related to students and suggest solutions and ways for development.

Rights and Duties

A Student's Academic Rights

1. A university student must be provided with the appropriate study environment and academic climate to enable him/her to obtain a high quality education in keeping with the university's mission.
2. Student has the right to be provided with the scientific material and knowledge associated with the university curricula in accordance with the university's rules and regulations which govern academic work.
3. Student has the right to maintain and keep total confidentiality and privacy of the information related to him/ her and will disclose or otherwise use the personal information, academic record and grade transcripts only to authorized persons.
4. Student has the right to be notified before any decision is taken against him/her, have his/ her attention drawn in case of any violations, and to be informed in writing of any decision taken and be given the right to object to any decision that runs contrary to his/her academic interest in accordance with the university's rules and regulations.
5. Student has the right to freedom of expression and discussion of the educational issues of interest to him/her, subject to the condition that this be accomplished within the boundaries of appropriate behavior in accordance with the university's rules and regulation.
6. Student has the right to file a grievance before the competent agencies in case of violation of his/her rights.
7. Student has the right to require the faculty members to commit to the hours and dates of the lectures, office hours and break periods and recess between the lectures. The faculty should not cancel or otherwise change the timings of the lectures except in cases of dire need, subject to announcing such change and to giving substitute lectures for the ones which have been canceled or missed and on the proviso that such arrangements should not contravene the student's time and his/ her ability to accommodate the substitute lectures.
8. The student has the right to be informed on how and where to get the university rules and regulations (the university website, the Admission and Registration Deanship, the Students' Affairs Deanship, etc.)
9. Each student has the right to be enrolled in the college or academic division of his/her choice in accordance with the admission and registration controls and conditions established by the university as well as with the constraints of the university's resources and capabilities.
11. A university student has the right to be issued the university's identification card to be used inside and outside the university.

12. A university student has the right to be informed of the orientation day intended to introduce and acquaint him or her with the university colleges and divisions so that he / she may determine which is the most suitable one to enroll in, subject to satisfaction of the admission conditions as may be determined by the responsible agency, namely the Deanship of Admission and Registration.
13. A university student has the right to access the study schedule before commencement of classes for completion of the registration of the courses available in the system in accordance with the terms and conditions of the Deanship of Admission and Registration
15. Deletion or addition of any curriculum or deletion of the entire study semester in accordance with the university calendar issued by the Deanship of Admission and Registration.
16. A university student has the right to access the study curriculum plan before commencement of the study. Such plan will include and provide information on the professor(s) involved in the curriculum, the study curriculum and its objectives and outputs, the time table for execution of the curriculum, methods and procedures of the student's evaluation during the semester, the examinations, the material – related activities, the practical applications of the material, distribution of the skills to be acquired and the knowledge and learning references and sources related to the curriculum.
17. A university student has the right to transfer from one college to another or from one division to another within the university or otherwise migrate from distance to regular learning system or vice versa in accordance with the applicable rules and regulations and the available resources and space in the college.
18. A university student has the right to be awarded the graduation document within the duration prescribed by the university and upon satisfaction of the graduation requirements in accordance with the applicable rules and regulations of the university.
19. A university student has the right to avail of constant communication opportunities with the faculty members in different ways and means, such as email or meetings during office hours etc.
20. A university student has the right to avail of the opportunity for effective scientific discourse and discussion and the freedom to pose questions to the faculty without embarrassment or trepidation while being committed to the ethics of debate and the dictates of public decency and respect.
21. A university student has the right to ensure the confidentiality of the complaint filed against his/her professor.
22. A university student has the right to a sense of security and the right to avoid being exposed to physical harm or health hazards as well as the moral and emotional security so that the student does not feel exposed to moral threats, such as intimidation by penalty, or else exposure to insults, ridicule or sarcasm by academic or administrative entities.

23. A university student has the right to have access to his/ her grades in the study curriculum and the results of periodic and semester tests after correction, to review his / her results in the final exams and to have access to and review his / her answer sheet, if need be, in accordance with the university-approved rules and regulations.
24. A university student has the right to be informed of the warnings, alerts or disqualifications and deprivation from sitting for the final exams and the causes thereof in advance.
25. The examination questions must be derived from the study curriculum and its contents, while paying due attention to the balanced and logical distribution of the grades within this framework.
26. A university student has the right to know the model answers to the questions of the semester tests.
27. A university student has the right to recover all homework submitted during the study semester, whether they are in hard copies, electronic softcopies or other forms.

A Student's Non-academic Rights:

1. A university student has the right to access social care services offered by the university in accordance with the applicable rules and regulations.
2. A university student has the right to access and receive adequate healthcare as provided for in the university rules and regulations, including treatment in hospitals and health centers attached to the university.
3. A university student has the right to participate in the activities offered by the university depending on available resources.
4. A university student has the right to avail of the university services and facilities, such as university housing, library, psychological and social assistance, sports playgrounds, educational activities and functions, restaurants, and car parks etc.). Such utilization will be in accordance with the university's applicable rules and regulations and available resources and facilities.
5. A university student has the right to avail the additional material incentives and rewards as provided for in the statutory regulations, if he / she is a top performer student.
6. A university student has the right to avail financial subsidies or loans after review of his / her financial condition and substantiation of his / her need for such subsidies in accordance with the university' rules and regulations.
7. A university student has the opportunity to attend training courses and programs, academic trips and voluntary activities and operations in a way that should not conflict with his / her academic duties.
9. A university student has the right to secure the appropriate and correct services for his /her needs.

If the student has special needs, he / she must be informed of such services based on available resources.

10. A university student has the right to evaluate the student service rendered to him/her using the questionnaire forms.

11. A university student has the right to access a specific entity in the university to take care of and follow up on his/her rights.

12. A university student has the right to be provided with a complete list of the rules and regulations, including the disciplinary and penalty rules

13. A university student has the right to be formally informed of the mistakes attributed to him/her.

The penalties meted out will be based on the university-approved disciplinary and penalty rules.

The penalties may go as high as final dismissal from the university.

The Student's Duties

1. The student is expected to respect the rules and regulations of the university.

2. The student is required to respect the dignity and safety of the university staff and personnel.

3. The student must present accurate and precise information at the time of registration and meet his/her administrative commitments to the institution.

4. The student must demonstrate good morals and behavior.

5. The student must respect the right to freedom of expression by university staff and personnel as long as within the limits allowed in the university regulations, academic norms and community values in the Kingdom of Saudi Arabia.

6. The student must never plagiarize the work of others.

7. The student must preserve and protect the study locations and devices provided for his / her services in the educational process. He / she must preserve all properties of the university and avoid tampering therewith for destruction and pilferage purposes.

8. The student must respect the university's security rules, public security controls, and maintain the university and its facilities in a clean and tidy state.

Student Counseling Services

A faculty member represents each programme on the college committee for advising, which is part of the CAMS student advising system. Following enrollment in the programme, each student is given a faculty member academic advisor who helps them learn about the resources that are available, the policies of the university and the programme, the curriculum, and any issues that impact the quality of instruction and learning. Additionally, the academic advisor is in charge of overseeing and

directing the student's development during his academic career. Every semester, the department has a meeting where students and teachers discuss issues related to extracurricular, academic, and career activities.

Special Support

- There are no general rules governing the compensation for students with disabilities and chronic illnesses. Decisions regarding such cases are taken on the merit of individual case, by the relevant department. (Guide for the students with special needs).
- The program prepares graduates for an applied profession which demands that all enrolled students are physically and mentally fit for the purpose of safe practice.
- The CAMS campus has all the facilities for disabled students like elevators, ramp in the main entrance of the building, separate vehicle parking space, specially designed toilets for disabled people etc.
- The program also motivates good performers and talented students through supporting their innovations, participation in seminars, workshops and conferences held outside the campus.
- Talented students are given open timing in the laboratories to do their thought-provoking experiments.
- Advanced Labs & Research Labs can be utilized by the talented students to carry out their research and innovations.

Curriculum Study Plan Table:

Bachelor Program (MLS, New)

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
Level 1	PENG 111	ENGLISH 1 اللغة الانجليزية (1) للسنة التحضيرية	REQUIRED	-	5	INSTITUTIONAL
	PCOA 100	العلوم الرقمية Digital Sciences		-	2	INSTITUTIONAL
	PBIO 100	علم الأحياء البشري Human Biology Science	REQUIRED	-	4	INSTITUTIONAL
	ULS 100	مهارات الحياة الجامعية University Life Skills		-	2	INSTITUTIONAL
	STA 100	Biostatistics إحصاء حيوي	REQUIRED		3	INSTITUTIONAL
Level 2	PENG 101	ENGLISH 2 اللغة الانجليزية (2) للسنة التحضيرية	REQUIRED	-	5	INSTITUTIONAL
	PENG 102	مصطلحات طبية Medical Terminology		-	2	INSTITUTIONAL
		كيمياء حيوية	REQUIRED		3	

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
	PCHM 100	Biochemistry المهارات المجتمعية Community Skills	REQUI RED	-	2	INISTITU TIONAL
	SOS 100	فيزياء حيوية Biophysics	REQUI RED	-	3	INISTITU TIONAL
	PPHS 100		REQUI RED	-		INISTITU TIONAL
Level 3	-	UNIVERSITY REQUIREMENT متطلبات جامعة	ELECTI VE		2 (2+0)	INISTITU TIONAL
	CAMS 231	Emergency care عناية طواري	REQUI RED		2 (1+1)	COLLEGE
	MLS 231	INTRODUCTION TO CLINICAL IMMUNOLOGY مقدمة في علم المناعة الكلينيكية	REQUI RED	ALL PREP COURS ES	3 (2+1)	PROGRA M
	MLS 232	FUNDAMENTALS OF ANATOMY AND PHYSIOLOGY مبادئ في علم التشريح وظائف الاعضاء	REQUI RED	ALL PREP COURS ES	4 (3+1)	PROGRA M
	MLS 233	MEDICAL MICROBIOLGY علم الاحياء الدقيقة الطبية PRINCIPLES OF CLINICAL		ALL PREP COURS ES ALL PREP COURS	4 (3+1)	PROGRA M

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
	MLS 234	BIOCHEMISTRY اساسيات علم الكيمياء الحيوية الاكلينيكية	REQUI RED REQUI RED	ES	3 (2+1)	PROGRA M
Level 4	-	UNIVERSITY REQUIREMENT متطلبات جامعة	ELECTI VE	-	2 (2+0)	INISTITU TIONAL
	CAMS 234	Quality of healthcare جودة الرعاية الصحية	REQUI RED	-	2 (2+0)	COLLEGE
	MLS 241	CLINICAL LABORATORY SKILLS مهارات المختبرات الكلينيكية	REQUI RED	MLS 232	2 (1+1)	PROGRA M
	MLS 242	CLINICAL IMMUNOLOGY AND SEROLOGY علم المناعة والامصال الكلينيكية	REQUI RED	MLS 231	3 (2+1)	PROGRA M
	MLS 243	CLINICAL BACTERIOLOGY علم البكتيريا الاكلينيكية	REQUI RED	MLS 233	3 (2+1)	PROGRA M
	MLS 244	INTRODUCTIO TO HISTOLOGY AND CYTOLOGY مقدمة في علم الانسجة والخلية	REQUI RED REQUI RED	MLS 232	3 (2+1)	PROGRA M
	MLS 245	CLINICAL BIOCEHMISTRY 1 علم الكيمياء الحيوية الكلينيكية 1	REQUI RED	MLS 234	3 (2+1)	PROGRA M
				REQUI		

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
			RED			
Level 5	-	UNIVERSITY REQUIREMENT متطلبات جامعة	ELECTIVE	-	2 (2+0)	INSTITUTIONAL
	CAMS 235	Healthcare Standards and Regulations المعايير و اللوائح للرعايا الصحية	REQUIRED	-	2 (2+0)	COLLEGE
	MLS 351	LABORATORY INSTRUMENTATION اجهزة المختبرات	REQUIRED	MLS 241	2 (1+1)	PROGRAM
	MLS 352	CLINICAL MYCOLOGY علم الفطريات الاكلينيكية	REQUIRED	MLS 243	2 (2+0)	PROGRAM
	MLS 353	CLINICAL BIOCHEMISTRY 2 علم الكيمياء الحيوية الاكلينيكية 2	REQUIRED	MLS 245	3 (2+1)	PROGRAM
	MLS 354	HEMATOLOGY 1 علم امراض الدم 1	REQUIRED	MLS 242	3 (2+1)	PROGRAM
	MLS 355	HISTOTECHNOLOGY علم تقنية الانسجة	REQUIRED	MLS 244	2 (1+1)	PROGRAM
	MLS 356	PATHOLOGY علم الامراض	REQUIRED	MLS 244	2 (2+0)	PROGRAM
	Level 6	-	UNIVERSITY REQUIREMENT متطلبات جامعة	ELECTIVE	-	2 (2+0)
MLS 361		CLINICAL PARASITOLOGY علم الطفيليات الاكلينيكية	REQUI	MLS 352	3 (2+1)	PROGRAM

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
	MLS 362	CLINICAL VIROLOGY علم الفيروسات الاكلينيكية	RED	MLS 352	2 (2+0)	PROGRAM
	MLS 363	HEMATOLOGY 2 علم امراض الدم 2	REQUIRED	MLS 354	3 (2+1)	PROGRAM
	MLS 365	URINE ANALYSIS AND BODY FLUIDS تحليل البول وسوائل الجسم	REQUIRED	MLS 353	3 (2+1)	PROGRAM
	MLS 365	RESEARCH METHODOLOGY AND ETHICS طرق واخلاقيات البحث	REQUIRED	MLS 351	2 (2+0)	PROGRAM
	MLS 366	MOLECULAR DIAGNOSTICS التشخيص الجزيئي	REQUIRED	MLS 353	3 (2+1)	PROGRAM
				ELECTIVE		
Level 7	-	UNIVERSITY REQUIREMENT متطلبات جامعة		-	2 (2+0)	INSTITUTIONAL
	MLS 471	BLOOD BANK بنك الدم	REQUIRED	MLS 363	3 (2+1)	PROGRAM
	MLS 472 OR MLS 473	TOXICOLOGY علم السموم OR INTRODUCTION TO FORENSIC SCIENCES مقدمة في علم الطب الشرعي	ELECTIVE	MLS 364	3 (2+1)	PROGRAM

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
	MLS 474	CLINICAL EPIDEMIOLOGY علم الوبائيات الاكلينيكي	REQUIRED	MLS 362	2 (2+0)	PROGRAM
	MLS 475	ADVANCED MEDICAL GENETICS وراثة طبية	REQUIRED	MLS 366	3 (2+1)	PROGRAM
	MLS 476 OR	LABORATORY MANAGEMENT AND QUALITY CONTROL ادارة المختبرات والجودة OR	ELECTIVE	MLS 351	2 (2+0)	PROGRAM
	MLS 477	HEALTH CARE SYSTEM AND OCCUPATIONAL SAFETY نظام الرعاية الصحية والسلامة المهنية	REQUIRED			
	MLS 478	RESEARCH PROJECT مشروع بحثي		MLS 365	3 (2+1)	PROGRAM
Level 8	-	UNIVERSITY REQUIREMENT متطلبات جامعة	ELECTIVE	-	2 (2+0)	INSTITUTIONAL
	MLS 481	CLINICAL PRACTICUM (MICROBIOLOGY) تدريب اكلينيكي (احياء دقيقة)	REQUIRED	MLS 471 MLS 474 MLS 475 MLS 478	3 (2+0+1)	PROGRAM
	MLS 482	CLINICAL PRACTICUM (MOLECULAR	REQUIRED		3 (2+0+1)	PROGRAM

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
	MLS 483	DIAGNOSTICS AND GENETICS) تدريب اكلينيكي (التشخيص الجزيئي والجينات)	REQUIRED	471 MLS 474 MLS 475 MLS	3 (2+0+1)	PROGRAM
	MLS 484	CLINICAL PRACTICUM (HAEMATOLOGY AND BLOOD BANK) تدريب اكلينيكي (علم امراض الدم وبنك الدم)	REQUIRED	471 MLS 474 MLS	3 (2+0+1)	PROGRAM
	MLS 485	CLINICAL PRACTICUM (CLINICAL BIOCHEMISTRY) تدريب اكلينيكي (كيمياء حيوية)	REQUIRED	471 MLS 474 MLS 475 MLS	2 (1+0+1)	PROGRAM
	MLS 486	CLINICAL PRACTICUM (IMMUNOLOGY) تدريب اكلينيكي (علم المناعة)	REQUIRED	471 MLS 474 MLS 475 MLS 478	2 (1+0+1)	PROGRAM
		CLINICAL PRACTICUM (HISTOLOGY AND CYTOLOGY) تدريب اكلينيكي (علم الانسجة والخلية)		471 MLS 474 MLS 475 MLS 478		
				471 MLS 474 MLS 475 MLS		

Level	Course Code	Course Title	Required or Elective	Pre-Requisite	Credit Hours	Type of requirements
				478		

Master of Science in Clinical Laboratory

Track: Clinical biochemistry

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS 701	ADVANCED TECHNIQUES IN CLINICAL LABORATORY	Required		3 (2+1)	Program
	CLS 702	PROFESSIONAL PRACTICE IN MEDICAL LABORATORY	Required		2 (1+1)	Program
	CLS 703	ADVANCED BIOSTATISTICS	Required		3 (2+1)	Program
	CLS 704	RESEARCH METHODOLOGY	Required		3 (3+0)	Program
Level 2	CLS 711	ADVANCED CLINICAL BIOCHEMISTRY 1	Required	CLS701	3 (2+1)	Program
	CLS 712	BIOCHEMISTRY OF BODY FLUIDS	Required	CLS701	3 (2+1)	Program
	CLS 705	MOLECULAR BASIS OF DISEASES	Required	CLS702	3 (2+1)	Program
	CLS 706	ADVANCED MEDICAL GENETICS	Required	CLS701	2 (2+0)	Program
Level 3	CLS 713	ADVANCED CLINICAL BIOCHEMISTRY 2	Required	CLS711	3 (2+1)	Program
	CLS 714	ADVANCED BIOINFORMATICS	Required	CLS711	3 (2+1)	Program
	CLS 715	ADVANCED MOLECULAR DIAGNOSTICS	Elective	CLS712	3 (2+1)	Program
	CLS 716	ADVANCED TOPICS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY	Elective	CLS711	3 (2+1)	Program
	CLS 707	PROJECT PROPOSAL	Required	CLS704 CLS705 CLS 706	1 (0+1)	Program
Level 4	CLS 708	THESIS	Required	CLS701 CLS702 CLS703	6 (0+6)	Program

CLS704
CLS705
CLS706
CLS707

Track: Clinical microbiology

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS 701	ADVANCED TECHNIQUES IN CLINICAL LABORATORY	Required		3 (2+1)	Program
	CLS 702	PROFESSIONAL PRACTICE IN MEDICAL LABORATORY	Required		2 (1+1)	Program
	CLS 703	ADVANCED BIostatISTICS	Required		3 (2+1)	Program
	CLS 704	RESEARCH METHODOLOGY	Required		3 (3+0)	Program
Level 2	CLS 721	ADVANCED CLINICAL MICROBIOLOGY 1	Required	CLS701	3 (2+1)	Program
	CLS 722	ADVANCED IMMUNOLOGY	Required	CLS701	3 (2+1)	Program
	CLS 705	MOLECULAR BASIS OF DISEASES	Required	CLS702	3 (2+1)	Program
	CLS 706	ADVANCED MEDICAL GENETICS	Required	CLS701	2 (2+0)	Program
Level 3	CLS 723	ADVANCED CLINICAL MICROBIOLOGY 2	Required	CLS 721	3 (2+1)	Program
	CLS 724	VIRUSES AND INFECTIONS	Required	CLS722	3 (2+1)	Program
	CLS 725	ADVANCED TOPICS IN CLINICAL MICROBIOLOGY	Elective	CLS721	3 (2+1)	Program
	CLS 726	ADVANCED TOPICS IN CLINICAL IMMUNOLOGY	Elective	CLS721	3 (2+1)	Program
	CLS 707	PROJECT	Required	CLS704	1 (0+1)	Program

		PROPOSAL		CLS705 CLS 706		
Level 4	CLS 708	THESIS	Required	CLS701 CLS702 CLS703 CLS704 CLS705 CLS706 CLS707	6 (0+6)	Program

Track: Clinical haematology

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS 701	ADVANCED TECHNIQUES IN CLINICAL LABORATORY	Required		3 (2+1)	Program
	CLS 702	PROFESSIONAL PRACTICE IN MEDICAL LABORATORY	Required		2 (1+1)	Program
	CLS 703	ADVANCED BIostatISTICS	Required		3 (2+1)	Program
	CLS 704	RESEARCH METHODOLOGY	Required		3 (3+0)	Program
Level 2	CLS 731	ADVANCED CLINICAL HAEMATOLOGY 1	Required	CLS701	3 (2+1)	Program
	CLS 732	BLOOD TRANSFUSION	Required	CLS701	3 (2+1)	Program
	CLS 705	MOLECULAR BASIS OF DISEASES	Required	CLS702	3 (2+1)	Program
	CLS 706	ADVANCED MEDICAL GENETICS	Required	CLS701	2 (2+0)	Program
Level 3	CLS 733	ADVANCED CLINICAL HAEMATOLOGY 2	Required	CLS731	3 (2+1)	Program
	CLS 734	ADVANCED TOPICS IN CLINICAL HAEMATOLOGY	Required	CLS732	3 (2+1)	Program
	CLS 735	BLOOD COAGULATION	Elective	CLS 731	3 (2+1)	Program




	CLS 736	DIAGNOSTIC MOLECULAR HAEMATOLOGY	Elective	CLS 731	3 (2+1)	Program
	CLS 707	PROJECT PROPOSAL	Required	CLS704 CLS705 CLS706	1 (0+1)	Program
Level 4	CLS 708	THESIS	Required	CLS701 CLS702 CLS703 CLS704 CLS705 CLS706 CLS707	6 (0+6)	Program

MDL Faculty Members

No	Faculty Name	Degree	Specialty	Rank	Nationality
1	Dr. Sahar M. Aldosari	Ph.D	Molecular Genetics	Assistant Professor	Saudi Arabia
2	Dr. Bader M. Alshehri	Ph.D	Molecular Biology - Immunology	Associate Professor	Saudi Arabia
3	Dr. Mohammed Alaidarous	Ph.D.	Biotechnology	Professor	Saudi Arabia
4	Dr. Abdul Aziz Dukhyil	Ph.D.	Molecular Biology	Associate Professor	Saudi Arabia
5	Dr. Mohammed Alsaweed	Ph.D.	Molecular Biology	Assistant Professor	Saudi Arabia
6	Dr. Raid Sal. Al-Baradie	Ph.D.	Histology	Professor	Saudi Arabia
7	Dr. Saeed S. Banawas	Ph.D.	Microbiology	Associate Professor	Saudi Arabia
8	Dr. Wael Alturaiki	Ph.D.	Molecular Immunology	Associate Professor	Saudi Arabia
9	Dr. Soliman Alasaqaby	Ph.D.	Molecular Biology	Professor	Saudi Arabia
10	Dr. Faiz Alghofaily	Ph.D.	Medical Microbiology	Assistant Professor	Saudi Arabia
11	Dr. Samy Almalki	Ph.D.	Molecular Immunology	Associate Professor	Saudi Arabia
12	Dr. Yehia Madkhali	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
13	Dr. Ayoub Alothaim	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
14	Dr. Ahmed Abdel-Hadi	Ph.D.	Molecular biology (mycology)	Assistant Professor	Egypt
15	Dr. Manikandan Palanisamy	Ph.D.	Microbiology	Professor	India
17	Dr. Kamal shaker	Ph.D.	Parasitology	Lecturer	Egypt
19	Dr. Hadeel Alyuonbawi	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
21	Dr. Allolo Aldorawish	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
22	Dr. Nesrin Ghazi	Ph.D.	Histology	Professor	Jordon
23	Dr. Randa Ibrahim	Ph.D.	Microbiology (Molecular Mycology)	Assistant Professor	Egypt
24	Dr. Johra Khan	Ph.D.	Molecular biology	Associate Professor	India
25	Dr. Sadaf Jahan	Ph.D.	Microbiology	Assistant Professor	India
26	Ms. Hana Alanazi	M.Sc.	Medical Laboratory Sciences	Lecturer	Saudi Arabia

Learning Resources, Facilities, and Equipment

1. Learning Resources

-  The University main library is located within the main campus building on the second floor. The Library contains a concentrated collection of medical laboratories books, journals, indexes, videos and computer software.
-  MU has subscription to many of the periodicals related to the medical laboratories profession. In addition, of subscribing several Electronic Library full-text databases, the students and faculty members also have the access to Saudi digital library (SDL)
<http://sdl.edu.sa/SDLPortal/EN/Publishers.aspx>.
-  Each course coordinator provides the text and related reference books for his courses to the head of department and then the head prepares a whole list for all courses and submits it to the dean of the college for approval and the dean sent all approved departments lists to the University central library for purchase.

2. Facilities and Equipment

Faculty and teaching staff follow the institutional process for planning and acquisition of any resources needed for library, laboratories, and classrooms, this procedure generally start by submitting their requests in appropriate forms to the department heads, who forwards it to the Lab and equipment committee for study and recommendations. Then the final list of equipment has to be approved in the department council. Then the collective lists will be submitted to the vice dean of academic affairs. Upon approval, these lists will take its track through college administration and then to the concerned university administrations.

The evaluation of the adequacy of textbooks, reference and other resources is done by faculty and teaching staff at the end of each semester, they write their recommendation in the course report form based on the feedback from students (surveys and focus groups), the internal and external evaluation of the course (quality committee + advisory Committee) and also on the new trends emerging in the field of study.

3. Procedures to ensure a healthy and safe learning environment

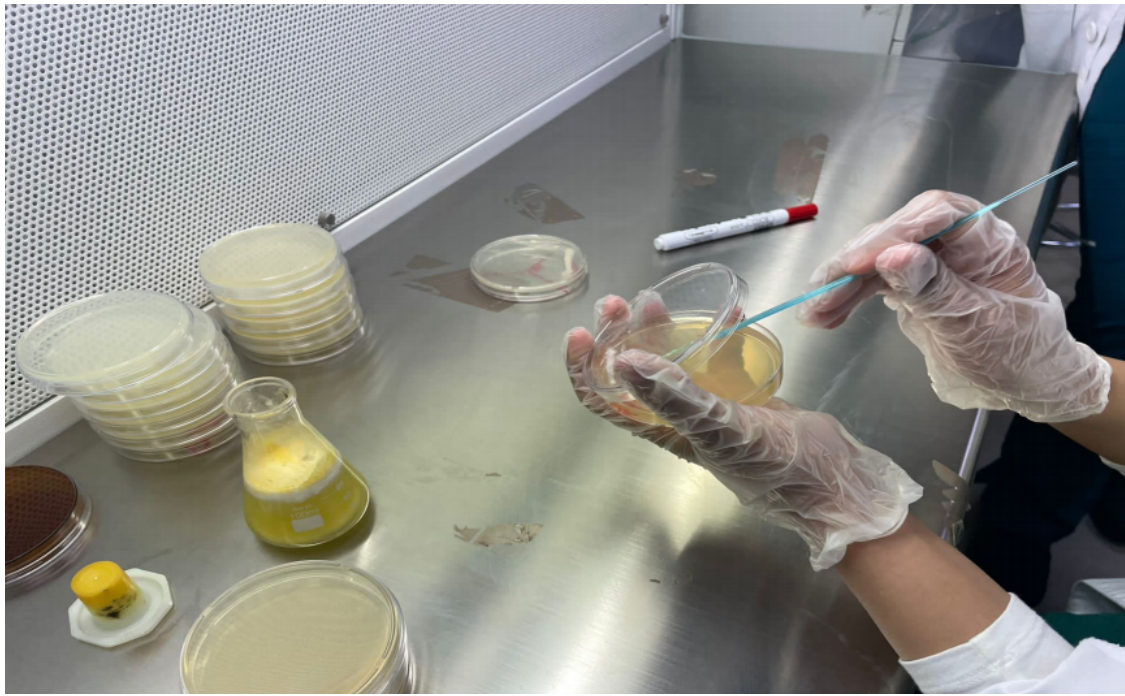
Effective communication among faculty members, departments, and work areas is essential to the environmental health and safety program's effectiveness. The University's environmental health and safety programme is adhered to by the Safety Committee in organising safety committees at the laboratory, building, department, or faculty level. This allows CAMS employees to voice their needs

and concerns regarding safety and has a platform to address them. The department is in charge of overseeing laboratory safety and making sure that safe lab procedures are followed. It is the responsibility of all staff members, visitors, administrators, doctors, supervisors, faculty, students, and staff to uphold a safe and healthy work environment. The second component of the safety programme is to make sure the laboratory complies with recognised safety standards. This entails paying close attention to how chemicals should be labelled, how electrical equipment should be earthed, and how biohazardous materials including all patient specimens should be handled and disposed of.

The College of Applied Medical Sciences will put in place a successful programme for staff and students' health and safety. Every employee will receive training on how to report and handle exposure to hazardous and infectious items. There will be training sessions aimed at reducing injuries. To start taking steps to safeguard themselves as well as the patients who are students and researchers at the college, all staff members will notify their supervisor whenever they come into contact with potentially infectious materials.



CHEMISTRY LAB – MAJMAAH MAIN CAMPUS



MICROBIOLOGY LAB – MAJMAAH MAIN CAMPUS



HAEMATOLOGY & HISTOPATHOLOGY LAB – MAJMAAH MAIN CAMPUS

Required Field Experience (Bachelor only)

Summary of practical, clinical or internship component required in the program.

Internship is a 12 months comprehensive clinical training program for recent graduates to prepare them for high-quality service in the profession. The graduate shall have completed all academic requirements to qualify for internship program.

The MDL internship components are:

- Hospital & Laboratory Orientation
- Sample receiving & processing area
- Microbiology & Parasitology
- Clinical biochemistry
- Immunology/Serology/Haematology
- Blood Bank
- Histopathology
- Diagnostic Molecular Laboratory
- Laboratory Management & quality control

Brief description of field experience activity

During internship, the students are expected to learn the following skills:

- Acquire real work environment experience in terms of handling human samples, sophisticated instruments and patient handling.
- Processing of all blood samples and make it ready for required testing procedures.
- Get familiar with laboratory tests and their standard operating procedures.
- Developing the ability to troubleshooting and quality control assessment.
- Develop good communication skills with peers in the hospital laboratory.

At what stage or stages in the program does the field experience occur?

End of 5th year of the program

Time allocation and scheduling arrangement.

Interns are required to work a minimum of 8 hours a day, 5 days a week for 48 weeks, or follow affiliate hospital working hours

Graduates' employment opportunities

Medical laboratory Sciences play a crucial role in the process of provides data that helps physicians determine the best treatment for the patient. Examine and analyze body fluids, tissues, and cells to identify bacteria, parasites, and other microorganisms. They analyze the chemical constituents of body fluids, crossmatch donor blood for transfusions, and test blood for drug levels to measure the efficacy of particular treatments. MDL also evaluate and interpret laboratory results, integrate data, solve problems, consult with physicians, conduct research, and evaluate new test methods. Graduates of this programme are qualified to work as technologist in medical labs in either public or private sector and in a wide range of arenas including.

- Hospital clinical laboratories
- Commercial or reference laboratories
- Public health laboratories
- Pharmaceutical or chemical industries
- Biotechnology companies
- Forensic and law enforcement laboratories
- Research and teaching institutions
- Transplant and blood donor centres
- Fertility clinics