

College of Applied Medical Sciences  
Majamaah University  
Medical Laboratory Sciences

## **Student guidelines**



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### **About the Programm:**

In 2005, The Department of Medical Laboratory Sciences (MDL) was established as the department of Laboratory Siences at the College of Sience – 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 Siences became one of CAMS departments as the MDL department. Nevertheless, the department of Laboratory Siences curriculum was continued to be taught untl 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:

**Program title and code:** Medical Laboratory Sciences (MDL)

**Name of the College:** College of Applied Medical Sciences

**Award granted on completion of the program:** Bachelor of Applied Medical Sciences

**Total credit hours needed for completion of the program:** 134 Credit hours

**Date of approval by the authorized body (MoHE for private institutions and Council of Higher Education for public institutions)**

Campus Branch/Location	Approval By	Date
<b>Main Campus: Majmaah campus</b>		
Majmaah Male Campus	Council of Higher Education	06/02/2007
Majmaah Female Campus	Council of Higher Education	06/02/2007
Zulfi Male Campus	Council of Higher Education	09/09/2005

**Person responsible for the program:** Dr. Mohammed A. Alaidarous, Head of the Department

### Importance of the program:

The program was established to cater the community needs of professional and highly skilful 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.

## Program Objectives:

- Professional and highly skillful in the field of medical laboratory to provide diagnosis and research services
- Commitment to life-long learning and scientific research to solve health problems of the community.
- Commitment to the ethical and humane aspects of patient care.
- Increase the awareness level among their population about local infectious and chronic diseases.
- Develop their leadership, communication skills and effectiveness work in team

Code	Outcomes
<b>Knowledge</b>	
<b>a1</b>	Establish a personal scientific knowledge base that prepares them to read, to interpret, and to utilize scientific knowledge in clinical practice.
<b>a2</b>	Demonstrate and apply theoretical concepts of medical laboratory sciences in conducting medical laboratory tests.
<b>a3</b>	Recognize the role of the clinical laboratory specialists in the assurance of quality health care.
<b>Cognitive Skills</b>	
<b>b1</b>	Proficiency to problem-solves, troubleshoot, recognize and interpret abnormal laboratory results and use statistical approaches when evaluating data.
<b>b2</b>	Exercise the principles of management and safety to include preventive and corrective maintenance of equipment as well as identify appropriate sources for repair.
<b>b3</b>	Execute quality control measures, and participate actively in quality assurance programs.
<b>Interpersonal skills and Responsibility</b>	
<b>c1</b>	Display high standards of ethical practice including interactions with patients, peers and other health care personnel

<b>c2</b>	Demonstrate leadership, team player, and the desire for continuing education for one's professional development.
<b>c3</b>	Demonstrate ability to handle stressful situations calmly and efficiently.
<b>Communication, information technology and numerical skills</b>	
<b>d1</b>	Demonstrate effective communication with patients, laboratory personnel and other health care professionals.
<b>d2</b>	Utilize computer technology applications to interact with computerized instruments and laboratory information systems
<b>Psychomotor skills</b>	
<b>e1</b>	Perform microscopic examination and analytical tests of cells, tissues, blood, body fluids, and other materials
<b>e2</b>	Establish proper procedures, for collecting, safe handling, processing, and analyzing human specimens to maintain accuracy and precision.

### Program Structure and Organisation:

### Program Description:

List the core and elective program courses offered each semester from preparatory year to graduation using the below Curriculum Study Plan Table (A separate table is required for each branch IF a given branch/location offers a different study plan).

### Curriculum Study Plan Table:

Year	Course Code	Course Title	Required or Elective	Credit Hours	College or Department
1st year (Preparatory year)  29 Credits	PENG 111	English (1) for Preparatory Year	Required	8	Deanship of Preparatory year
	PMTH 112	Introduction to Mathematics (1)	Required	2	
	PCOM 113	Computer Skills	Required	2	
	PSSC 114	Learning and Communication Skills	Required	2	
	PENG 121	English (2) for Preparatory Year	Required	6	

	PENG 122	English for Medical Specialties	Required	2	
	PCHM 124	Introduction to Chemistry	Required	2	
	PPHS 125	Physics for Health Purposes	Required	2	
	PBIO 126	Biology Science	Required	3	
2nd Year Semester 1 17 Credits	MDL 231	Principles of Anatomy	Required	2	Department
	MDL 232	Principles of Physiology	Required	2	
	MDL 233	Organic Chemistry	Required	3	
	MDL 234	General Microbiology	Required	4	
	CAMS 231	Emergency Care	Required	2	College
	CAMS***	CAMS Elective Course	Elective	2	
	MU***	MU Elective Course	Elective	2	University
2nd Year Semester 2 18 Credits	MDL 241	Haematology	Required	3	Department
	MDL 242	Histology	Required	3	
	MDL 243	Medical Microbiology	Required	3	
	MDL 244	Introduction to Immunology	Required	2	
	MDL 245	Analytical Chemistry	Required	3	
	CAMS***	CAMS Elective Course	Elective	2	College
	MU***	MU Elective Course	Elective	2	University
3rd Year Semester 1 17 Credits	MDL 351	Principles of Biochemistry	Required	3	Department
	MDL 352	General Pathology	Required	3	
	MDL 353	Histotechnology	Required	3	
	MDL 354	Clinical Mycology	Required	3	
	MDL 355	Clinical Parasitology	Required	3	

	MU***	MU Elective Course	Elective	2	University
3rd Year Semester 2 17 Credits	MDL 361	Medical Biochemistry(lecture)	Required	3	Department
	MDL 362	Electron Microscopy(lecture)	Required	3	
	MDL 363	Clinical Bacteriology(lecture)	Required	3	
	MDL 364	Pathophysiology(lecture)	Required	3	
	MDL***	Program elective Course	Elective	3	
	MU***	MU Elective Course	Elective	2	University

## MU Elective Course

SALM 101	Introduction to Islamic Culture	2	The student should study 3 / 4
SALM 102	Islam and Society Development	2	
SALM 103	Islamic Economic System	2	
SALM 104	Fundamentals of Islamic Politics	2	
ARAB 101	Arabic Language Skills	2	The student should study 1 / 2
ARAB 103	Arabic Editing	2	
ENG 101	English Language	2	The student should study 2 / 7
SOCI 101	Contemporary Societal Issues	2	
HAF 101	Fundamentals of Health and Physical Fitness	2	
ENT 101	Entrepreneurship	2	
LHR 101	Legislations and Human Rights	2	
FCH 101	Family and Childhood	2	
VOW 101	Voluntary Work	2	

CAMS 232	Medical Terminology	2	The student should study 2 / 3
CAMS 233	Biostatistics	2	
CAMS 234	Quality of Health Care	2	

### CAMS Elective Course

### MDL Elective Course

MDL 365	Health care system and occupational safety	3	The student should study 1 / 2
MDL 366	Laboratory Management	3	
MDL 476	Medical Genetics	3	The student should study 1 / 2
MDL 477	Diagnostic Molecular Biology	3	

Course name	code	credit	Course name	code	credit
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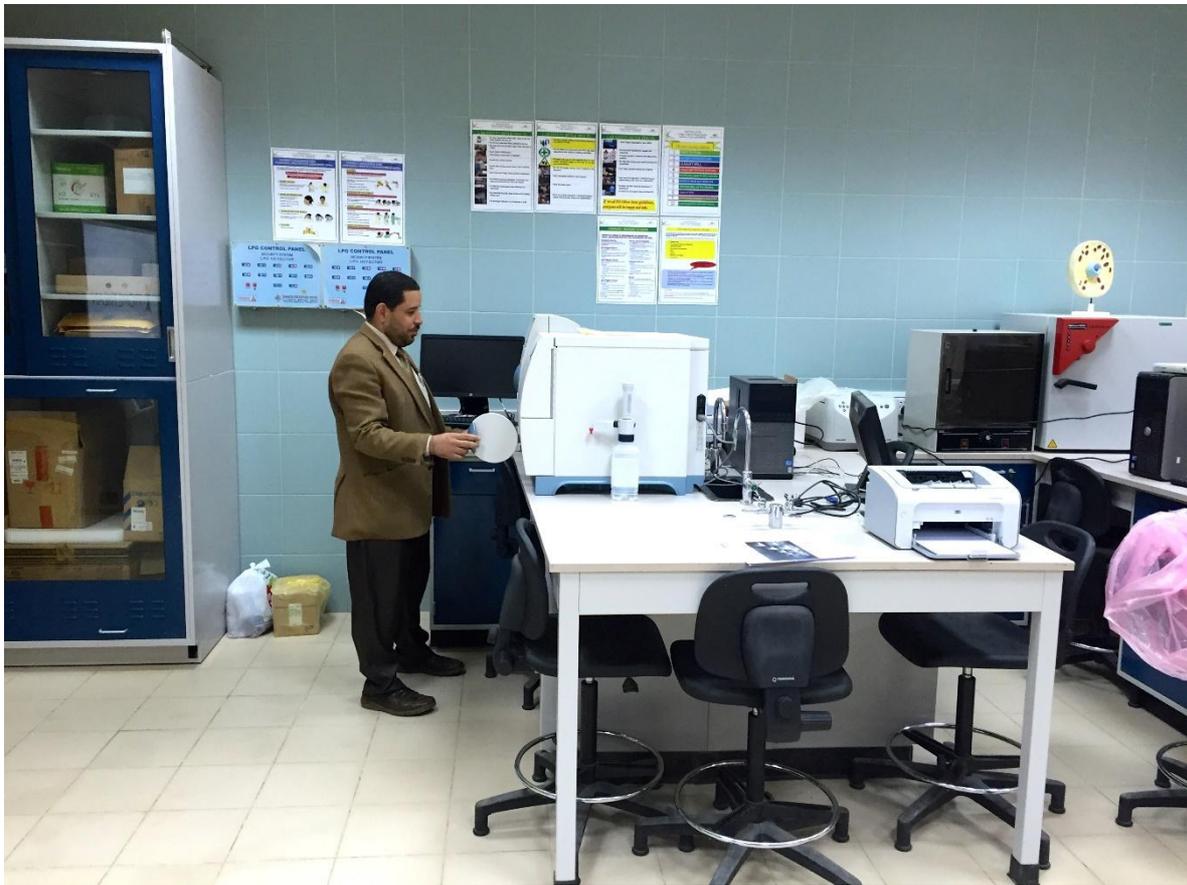
Level 1/ semester 1 (preparatory year)			Level 2/ semester 2 (preparatory year)		
English 1	PENG-111	8	English 2	PENG-121	6
Introduction to mathematics 1	PMTH -112	2	English for health purposes	PENG-122	2
Computer skills	PCOM- 113	2	Introduction to chemistry	PCHM-124	2
Learning skills and	PSSC-114	2	Physics for health	PPHS-125	2

communication			purposes		
			Biology	PBIO-126	3
Total		14	Total		15
Level 3/ semester 3			Level 4/ semester 4		
University requirement 1	-	2	University requirement 2	-	2
Principles of Anatomy	MDL-231	2	Hematology	MDL-241	3
Principles of Physiology	MDL-232	2	Histology	MDL-242	3
Organic Chemistry	MDL-233	3	Medical Microbiology	MDL-243	3
General Microbiology	MDL-234	4	Introduction to Immunology	MDL-244	2
Emergency care	CAMS-231	2	Analytical Chemistry	MDL-245	3
College required elective 1	-	2	College required elective 2	-	2
Total		17	Total		18
Level 5/ semester 5			Level 6/ semester 6		
University requirement 3	-	2	University requirement 4	-	2
Principles of Biochemistry	MDL- 351	3	Medical Biochemistry	MDL- 361	3
General Pathology	MDL- 352	3	Electron Microscopy	MDL- 362	3
Histotechnology	MDL- 353	3	Clinical Bacteriology	MDL- 363	3
Clinical Mycology	MDL- 354	3	Pathophysiology	MDL- 364	3
Clinical Parasitology	MDL- 355	3	Department required elective	MDL- 365/366	3
Total		17	Total		17
Level 7/ semester 7			Level 8/ semester 8		
University requirement 5	-	2	University requirement 6	-	2

Clinical Virology	MDL- 471	3	Applied Clinical Microbiology	MDL- 481	3
Epidemiology	MDL- 472	2	Applied Clinical Biochemistry	MDL- 482	4
Clinical Immunology and serology	MDL- 473	3	Analytical Laboratory Automation	MDL- 483	3
Clinical Biochemistry	MDL- 474	3	Applied Immunology and Hematology	MDL- 484	3
Research and Seminar	MDL- 475	2	Cellular and Molecular Pathology	MDL- 485	3
Department required elective	MDL- 476/477	3			
Total		18	Total		18
Total program CP			134		



**CHEMISTRY LAB – MAJMAAH MAIN CAMPUS**



**MICROBIOLOGY LAB – MAJMAAH MAIN CAMPUS**



**HAEMATOLOGY LAB – MAJMAAH MAIN CAMPUS**

### **Required Field Experience:**

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

**For contact and further details:**

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