MANUAL OF DEPARTMENT OF MEDICAL LABORATORY SCIENCES

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Contents

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 CLS Program staff participates in a wide variety of activities within the department and professional community.

Dr. Mohammed Alaidarous

Head of the Medical Laboratory Sciences

About the Department:

The Medical Laboratory Sciences (MDL) program provides traditional courses as well as extensive training in actual clinical laboratories. Program's lectures and our practical session in labs provide students with a substantial knowledge base as well as fundamental skills and basic techniques in clinical laboratories. The facilities are modern and well equipped for this purpose. Students receive instruction using actual clinical specimens in a laboratory environment, and students are trained to process these samples and examine all data and results. Additionally, MDL students trained to interact with potential technical errors that could be detected during their lab work and troubleshooting. Both BSc & MSc programs required actively involvement of students in discussions and writing reports to tests their understanding and getting responsibility in initial diagnosis of patient's result in different disciplines as a lab specialist in the future. Finally, MDL department arrange for student's visit to medical laboratories in variety of Hospitals, research centers and medical cities in order to enhance the process of learning and encourage students to gain deep knowledge and understanding of their work space in future.

Program title and code: Masters in Clinical Laboratory Sciences (CLS)
Name of the College: College of Applied Medical Sciences

Master of Science in Clinical Laboratory Sciences (MSc CLS)

- **Importance of the Program:**

As the healthcare sector continues to expand, there is a growing demand for skilled professionals who can perform accurate diagnostic tests and contribute to patient care. This trend is driven by increasing healthcare investment, a growing population, and a focus on enhancing medical services. With numerous hospitals, clinics, and research institutions, there are ample opportunities for Clinical Laboratory Specialists to work in both public and private sectors. Additionally, the government's initiatives to boost healthcare infrastructure create a favorable job market.

- **Mission:**

To prepare competencies in Clinical laboratory field to enhance learners' scientific research skills and deeply prepared courses to expand the knowledge provided by recognized faculty member in their specialty in order to cope with the evolution in the field of laboratory diagnostic techniques.

- **Program objectives:**

Master of Science in Clinical Laboratory Sciences Program at Majmaah University

enables students to:

1. Learning the fundamental principles and recent advances in Clinical Laboratory.

2. Updating students about the modern technologies in Clinical and Research field.

3. Enable students to understand the principles of laboratory management, safety, quality control, research and statistical approach.

4. Motivate students to commit to life-long learning and scientific research to solve health problems of the community.

5. Allow students to develop their management, leadership, communication, teamwork, writing and presentation skills.

- **Program Outcomes:**

1. Enriching educational government institutions, hospitals and research centers with specialists and experts in clinical laboratory sciences.

2. Encourage postgraduate students for Life-long learning, involvement in scientific research and applying ethics on humane aspects of clinical laboratory practices.

3. Enhance the leadership, communication and effectiveness work in team.

Department Structure and Organization:

Department Description:

List of 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).

MDL Deportment's Committees:

1- Quality and academic accreditation Committee
2- Academic affairs Committee
3- Student's affairs Committee
4- Training and Clinical affairs Committee
5- Scientific research & innovation Committee
6- Human resources & higher Education Committee
7- Curriculum & study plan development Committee
8- Laboratories & equipment Committee

9- Educational and Curriculum Committee

10- Faculty Affairs committee

11- Graduate Affairs committee

12- Volunteers and Community Service committee

Some of the committees are described below;

1. Quality and academic accreditation Committee

1.1 Introduction

The Quality & 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 CLS 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 that need improvement and proposes the appropriate solutions.

- Organize a meeting with stakeholders through the advisory board.
- Implement workshops and quality learning sessions for faculty members.

2. Academic affairs Committee

2.1 Introduction

The academic affairs 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. Student's affairs Committee

3.1 Introduction

The Committee of Curriculum development 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 CLS 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. Scientific research & innovation Committee

4.1 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.

4.2 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 CLS students.

5. Human resources & higher Education Committee

5.1 Introduction

The Human Resources & Higher Education Committee is a committee of the MDL department. Its responsibilities 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.

5.2 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.

6. Curriculum & study plan development Committee

6.1 Introduction

The Committee of Curriculum & study plan development 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 CLS 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.

6.2 Tasks and Duties

- The committee reviews all course specifications, files, content, in order to improve their courses learning outcomes (ILOs).
- The committee requests meeting with other units/committees, if needed.
- The committee gathers current study plans for review.
- Submit a monthly report to the Vice Dean for Educational Affairs

7. Laboratories & equipment 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.

8.1 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.

Admission Requirements

The initial enrolment for the program is done once a year at the beginning of each academic year. The enrolment in the program is completely online, the students apply through the deanship of student's admission and registration website. Based on their eligibility and availability of seats, the students are then assigned to different colleges and departments.

General Requirements for Admission: Majmaah University (MU) has central policies and procedures for admitting and following up the progress of all students throughout the university. The following are admission requirements stipulated for the admission of the new student:

An applicant for admission must have a Saudi Secondary School Certificate -Science Section (SSSCSS) or its equivalent. The secondary school certificate should not be more than five years old and the Rector of the University may give exemption from this condition.

- Must have an Aptitude Test Certificate (ATC) administered by the National Center for Assessment in Higher Education.
- The minimum qualifying scores in SSSCSS & ATC tests are: (a) A total equivalent percentage of 75% (based on 30% from the SSSCSS + 30% from the ATC + 40% from cumulative basic Science of SSSCSS).
- Must not have been dismissed from another university for disciplinary reasons.
- When applicants exceed availability, priority is given to the students with higher grades.

Attendance

The regular student must attend the lectures. He shall be debarred from the final examination if the percentage of his attendance is less than the percentage fixed by the University Council, provided it is not less than (75%) of the lectures for each course during the semester.

The student who is debarred, because of absence, is considered as a failure in the course and will be awarded the denial grade (DN).

The grade of the student who absents himself from the final examination shall be zero in that exam. His grade in that course shall be counted according to the scores of the course work he obtains.
The student may withdraw from the semester without being considered a failure if he provides an acceptable excuse to the authority specified by the University Council, within a period of time specified by the operational rules, approved by the University Council. The grade (W) shall be given to the student. This semester will be counted as part of the time required to complete the requirements of graduation.

Examination

The assessment measures are designed to evaluate the effectiveness of teaching methods for delivering the intended program outcomes. A range of assessments strategies that match all aspects of the instructional plans is being used for different modules. The assessment strategies are planned to match the instructional goals and objectives at the beginning of the semester and implemented throughout the semester. The selection of appropriate assessments also matches courses and program objectives. All the modules of the medical laboratories sciences program have specific learning objectives that are aligned with the program outcomes. Both direct and indirect assessment techniques are utilized to ensure that the desired program outcomes are achieved. The process of assessment is carried out by using combinations of course work such as quizzes, written exams, lab reports, presentations, homework, etc., Where the grades on these exercises are directly tied to the course outcomes. One to two midterm exams and one end of the semester final examination are conducted during each semester and, as part of continuous assessment; quizzes, class presentation, group discussion, assignments are conducted on regular basis throughout the semester.

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 is 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.

Thesis and Its Requirements (Master)

1. Student Admission Requirements

The initial enrolment for the program is done once a year at the beginning of each academic year. The enrolment in the program is completely online, the students apply through the deanship of student's admission and registration website. Based on their eligibility and availability of seats, the students are then assigned to different colleges and departments.

General requirements for admission:

The following are admission requirements stipulated for the admission for the Master of Science program.

• Should have a Bachelor's degree from any other national/international university which has been accredited by the Saudi Ministry of Higher Education.

• Should have good morals and conduct and be medically fit

• Should provide two recommendation letters from teachers who have already taught

• If employed, approval/NOC certificate/letter from the employer to study the master.

• Attach the general capacity test to the university students, provided that the degree is not less than 70.

• The Department of Medical Laboratory reserves the right to add other conditions or requirements.

Admission requirements for the department:

• Should have a bachelor's degree in one of the specialties of medical laboratory science or its equivalent with similar names in Saudi universities such as "Medical Laboratory Technology, Laboratory Medicine and Clinical Laboratory Sciences".

• Obtaining a Certificate of Training (Franchise).

• The student gets a very good grade at least at the university level, and the Deanship of Graduate Studies may accept a high (good). The Council of the Deanship of Graduate Studies may, upon the recommendation of the Department Council and the approval of the College Council, accept the students who have received a good assessment, provided that the student's rate is not less than that of the Bachelor's degree

• The student should have an acceptable background in the fields of medical laboratory sciences. (Some candidates may be required to complete some supplementary courses from the Bachelor of Medical Laboratory Sciences program at the University of Majmaah as a prerequisite for starting the master's degree).

• English language proficiency is required for candidates who have not graduated from countries that use English as a first language. All candidates must provide IELTS with a minimum score 4, or equivalent score for TOEFL test (IBT, CBT, or PBT) and Standardized Test for English Proficiency (STEP). All the English tests will not be accepted after two years of the obtaining date.

2. Registration of the thesis:

Every graduate student should be allocated an academic advisor at the time of enrollment. In accordance with guidelines set by the Council of the Deanship of Graduate Studies, the advisor will assist and guide the student in selecting the topic for the thesis or dissertation as well as the research strategy. Every student in the department must collaborate with a supervisor on an individual basis. The work's outcome will result in the development of innovative tools and procedures that will benefit society. The work's excellence will result in publication in a reputable journal. At the conclusion of each semester, the supervisor will review the work in progress.

Once the graduate student has fulfilled all entry requirements and completed 50% of the needed courses with a minimum cumulative GPA of "B," he or she should submit the thesis proposal, if applicable, to the relevant department. In the event that the proposal is accepted, the thesis committee members and chairman, as well as a thesis adviser and co-advisor if necessary, will be assigned by the Department

Council. Then, in accordance with the College Council's recommendations, this data ought to be presented to the Council of the Deanship of Graduate Studies for approval.

The Deanship of Graduate Studies is responsible for registering/recording all of the student's credit hours for the thesis after the supervisor for the thesis is nominated, the suggested title of the thesis is approved, and the student passes any applicable comprehensive exam.

3. Scientific Supervision:

One acknowledged component of the academic obligation of teaching is supervision. Both the supervisee and the supervisor have obligations when it comes to supervision. The thesis advisors must be university academic members with the rank of professor or associate professor. If an assistant professor has been employed by the university for at least two years and has had at least two papers published or accepted for publication in refereed journals in his field of expertise, he is eligible to serve as an advisor for a master's thesis. Participation and assistance with supervision are welcome from an associate professor or professor from the same department. After serving as an assistant professor for a minimum of one year and having at least one work published or accepted for publication in a refereed journal within his field of expertise, the assistant professor is eligible to supervise a master's thesis.

A faculty member may supervise or co-supervise up to four master's thesis dissertations concurrently. If necessary, the number may be increased to five with the consent of the College Council, the Council of the Deanship of Graduate Studies, and the recommendations of the relevant Department Council. Whether a faculty member is the primary advisor or the only advisor, the supervision of a thesis or dissertation shall be credited as one credit hour towards the faculty member's teaching load. When an advisor is no longer able to oversee a thesis or dissertation or decides to leave the University, the department in question should recommend a replacement, who will need to be accepted by the College Council and the Council of the Deanship of Graduate Studies. The adviser is responsible for providing a thorough report on the student's work progress to the department chairman by the end of each semester. The Graduate Studies Dean should get a copy of the report. In order to start the process established by the Council of the Deanship of Graduate Studies, the adviser of the student must notify the Chairman of the Department in question that the student has completed their thesis or dissertation.

4. Thesis Defense/Examination

The thesis supervisor submits a letter to the programme director when the thesis has been completed, suggesting two or three candidates for the potential thesis evaluation committee. Along with this letter, an unbound copy of the thesis is also supplied. The Department Chairman receives both the thesis and the letter from the Programme Director. The Vice Dean of Graduate Studies and Scientific Research, who

may recommend additional examiners, receives the letter and thesis from the Department Chairman and uses it to appoint an examination committee. The item "appointment of examiners for this candidate" is added to the Joint Graduate Programme Council's agenda for the upcoming meeting by the Vice Dean of Graduate Studies and Scientific Research.

Three members (five members in the case of two thesis supervisors) are chosen by the council to serve on the examination committee. Thesis supervisors, programme directors, and department chairs submit recommendations for persons to be considered for appointment to the examination committee; these recommendations may or may not be elected. The College Board is then notified by the Vice Dean with the names of the examination committee. The names are forwarded to the College of Graduate Studies for appointment upon approval. The Vice Dean then sends letters and a copy of the thesis to each member of the examination committee after she receives the letters of appointment for the committee. The letter inquires about the thesis' eligibility for defense from the members of the examination committee. All examiners are given a period of two weeks to answer.
The thesis supervisor(s) or student, in collaboration with the Vice Dean and the examination committee, determines a date and time if the thesis is approved by all members. There are two sections to the thesis examination. Part I is composed of a 20–30 minute PowerPoint presentation and a 10–15 minute audience Q&A session. The thesis supervisor chairs the examination committee for Part II, which is a closed oral examination. The following alternatives are available to the Vice Dean upon receipt of the examination committee's report: -

-Thesis approved;
- Thesis approved with minor revisions;
- Thesis approved with considerable alterations.
- Thesis turned down

Before the thesis is finally approved, a member is designated to oversee the suggested modifications in the event that the committee recommends approval with modifications. The committee will notify the vice dean in writing of its decisions if the thesis is rejected. Each member of the examination panel signs the acceptance page (five original copies) once the thesis has been approved. The candidate then sends, via the Department Chairman, two bound copies and one soft copy on a CD to the Vice Dean of Graduate Studies. The Graduate Studies Deanship additionally requires additional bound hard copies. Additionally, programme directors, supervisors, examiners, and other senior members of the faculty and administration typically receive courtesy copies from students. Lastly, a note attesting to the student's programme

completion is sent by the Vice Dean of Graduate Studies to the Director of the Programme and the Chairman of the Department for the student's file.

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

Curriculum Structure of MSc CLS:

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Course	Required	11 each track	30	85%
	Elective	1 each track	3	
Graduation Project (if any)		-	-	
Thesis (if any)		1	6	15%
Field Experience(if any)		-	-	
Others (.....)		-	-	
Total		**13 each track**	**39**	**100%**

Program Learning Outcomes:

1. Program Learning Outcomes: M. Sc CLS in Biochemistry and Molecular Medicine	
Knowledge and Understanding:	
K1	Students will demonstrate a detailed knowledge of specific areas of medical microbiology, Biochemistry, haematology, immunology and molecular biology
K2	Students will assimilate this knowledge on diagnostic procedures and INTEGRATE it in the context of diagnostic clinical laboratory research areas.
Skills:	
S1	Students will independently design effective experiments and research strategies by conducting a research project; within a chosen area of clinical laboratory
S2	Students will develop ideas through the evaluation of appropriate literature, concepts and principles.
S3	Students will demonstrate problem-solving skills by analysing, judging, interpreting and critically evaluating biomedical data.
S4	Students will correctly perform quality control and assurance procedures
S5	Student will competently perform advanced biomedical laboratory techniques in accordance with health and safety guidelines.
S6	Students will communicate effectively by means of oral, written and poster presentations, using print and electronic resources, reporting information, ideas and actions clearly, autonomously and competently.
S7	Students will demonstrate competence in the use of information technology
Values, Autonomy, and Responsibility:	
V1	Students will apply Ethical and legal issues in biomedical science.
V2	Students will work effectively with a group as a leader or member, to produce team seminars.

2. Program Learning Outcomes: M. Sc CLS in Microbiology and Immunology	
Knowledge and Understanding:	
K1	Students will demonstrate a detailed knowledge of specific areas of medical microbiology, Biochemistry, hematology, immunology and molecular biology
K2	Students will assimilate this knowledge on diagnostic procedures and INTEGRATE it in the context of diagnostic clinical laboratory research areas.
Skills:	
S1	Students will independently design effective experiments and research strategies by conducting a research project; within a chosen area of clinical laboratory
S2	Students will develop ideas through the evaluation of appropriate literature, concepts and principles.
S3	Students will demonstrate problem-solving skills by analysing, judging, interpreting and critically evaluating biomedical data.
S4	Students will correctly perform quality control and assurance procedures
S5	Student will competently perform advanced biomedical laboratory techniques in accordance with health and safety guidelines.
S6	Students will communicate effectively by means of oral, written and poster presentations, using print and electronic resources, reporting information, ideas and actions clearly, autonomously and competently.
S7	Students will demonstrate competence in the use of information technology
Values, Autonomy, and Responsibility:	
V1	Students will apply Ethical and legal issues in biomedical science.
V2	Students will work effectively with a group as a leader or member, to produce team seminars.

3. Program Learning Outcomes: M. Sc CLS in Haematology and Blood Transfusion	
Knowledge and Understanding:	
K1	Students will demonstrate a detailed knowledge of specific areas of medical microbiology, Biochemistry, hematology, immunology and molecular biology
K2	Students will assimilate this knowledge on diagnostic procedures and integrate it in the context of diagnostic clinical laboratory research areas.
Skills:	
S1	Students will independently design effective experiments and research strategies by conducting a research project; within a chosen area of clinical laboratory
S2	Students will develop ideas through the evaluation of appropriate literature, concepts and principles.
S3	Students will demonstrate problem-solving skills by analysing, judging, interpreting and critically evaluating biomedical data.
S4	Students will correctly perform quality control and assurance procedures
S5	Student will competently perform advanced biomedical laboratory techniques in accordance with health and safety guidelines.
S6	Students will communicate effectively by means of oral, written and poster presentations, using print and electronic resources, reporting information, ideas and actions clearly, autonomously and competently.
S7	Students will demonstrate competence in the use of information technology

Values, Autonomy, and Responsibility:	
V1	Students will apply Ethical and legal issues in biomedical science.
V2	Students will work effectively with a group as a leader or member, to produce team seminars.

Master's Program Courses:

TRACK 1: MSc CLS Biochemistry and Molecular Medicine

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS601	Cellular and Molecular Biology	Required		3	Program
	CLS602	Professional Practice in Medical Laboratory	Required		2	Program
	CLS603	Biostatistics	Required		3	Program
	CLS604	Research Methodology	Required		3	Program
	CLS605	Medical Genetics	Required	CLS601	2	Program
Level 2	CLS611	Biochemistry I	Required	CLS601	3	Program
	CLS612	Biochemistry of Body Fluids	Required	CLS601	3	Program
	CLS613	Molecular Basis of Disease	Required	CLS601	3	Program
Level 3	CLS614	Biochemistry II	Required	CLS611	3	Program
	CLS615	Molecular Diagnostics	Required	CLS613	3	Program
	*CLS616	Endocrinology and Medical Metabolism	Elective Choose ONE	CLS611	3	Program
	*CLS617	Topics in Molecular Medicine		CLS613	3	Program
	CLS606	Project Proposal	Required	CLS603	2	Program
Level 4	CLS606	Thesis	Required	All Courses in Semester 1, 2, 3	6	Program

TRACK 2: MSc CLS in Microbiology and Immunology

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS601	Cellular and Molecular Biology	Required		3	Program
	CLS602	Professional Practice in Medical Laboratory	Required		2	Program
	CLS603	Biostatistics	Required		3	Program
	CLS604	Research Methodology	Required		3	Program
	CLS605	Medical Genetics	Required	CLS601	2	Program
Level	CLS621	Microbiology I	Required	CLS602	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
2	CLS622	Immunology	Required	CLS601	3	Program
	CLS623	Diagnostic Microbiology	Required	CLS601	3	Program
Level 3	CLS624	Microbiology II	Required	CLS621 CLS623	3	Program
	CLS625	Antimicrobial Agents and Infection Control	Required	CLS621 CLS623	3	Program
	*CLS626	Viral Pathogenesis and Infection	Elective Choose ONE	CLS622 CLS623	3	Program
	*CLS627	Infectious and Non-infectious Diseases		CLS622 CLS623	3	Program
	CLS606	Project Proposal	Required	CLS603	2	Program
Level 4	CLS606	Thesis	Required	All Courses in Semester 1, 2, 3	6	Program

* Elective

TRACK 3: MSc CLS in Haematology and Blood Transfusion

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CLS601	Cellular and Molecular Biology	Required		3	Program
	CLS602	Professional Practice in Medical Laboratory	Required		2	Program
	CLS603	Biostatistics	Required		3	Program
	CLS604	Research Methodology	Required		3	Program
	CLS605	Medical Genetics	Required	CLS601	2	Program
Level 2	CLS631	Haematology I	Required	CLS601	3	Program
	CLS632	Blood Transfusion I	Required	CLS601	3	Program
	CLS633	Diagnostic Molecular Haematology	Required	CLS601 CLS602		Program
Level 3	CLS634	Haematology II	Required	CLS631	3	Program
	CLS635	Topics in Clinical Haematology	Required	CLS631	3	Program
	*CLS636	Blood Coagulation and Haemostasis	Elective Choose ONE	CLS633	3	Program
	*CLS637	Blood Transfusion II		CLS631	3	Program
	CLS606	Project Proposal	Required	CLS603	2	Program
Level 4	CLS606	Thesis	Required	All Courses in Semester 1, 2, 3	6	Program

Master's Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses, according to the following desired levels of performance *(I = Introduced P = Practiced M = Mastered).*

Course code & No.	Program Learning Outcomes: TRACK: M. Sc CLS Biochemistry and Molecular Medicine										
	Knowledge and understanding		Skills							Values, Autonomy & Responsibility	
	K1	K2	S1	S2	S3	S4	S5			V1	V2
Common courses											
CLS601	I	I			I		I	I			I
CLS602		I	I		I		I	I		I	
CLS603		I		I			I	I		I	
CLS604		I	I		I			I	I		I
CLS605		I		I	I			I		I	
CLS606			P	P	P		P		P	P	
CLS607		M	M	M	M	M	M	M	M		M
Track Specific											
CLS611	P				P		P	P			P
CLS612		P		P	P		P	P			P
CLS613	P	P		P	P		P		P		P
CLS614	M	M		M		M			M	M	
CLS615		M		M	M	M		M		M	
CLS616	M	M		M			M		M		M
CLS617		M	M		M		M		M	M	

Course code & No.	Program Learning Outcomes: TRACK: M. Sc CLS in Microbiology and Immunology										
	Knowledge and understanding		Skills							Values, Autonomy & Responsibility	
	K1	K2	S1	S2	S3	S4	S5			V1	V2
Common courses											
CLS601	I	I			I		I	I			I
CLS602		I	I		I		I	I		I	
CLS603		I		I			I	I		I	
CLS604		I	I		I			I	I		I
CLS605		I		I	I			I		I	

Course code & No.	Program Learning Outcomes: TRACK: M. Sc CLS in Microbiology and Immunology										
	Knowledge and understanding		Skills							Values, Autonomy & Responsibility	
	K1	K2	S1	S2	S3	S4	S5			V1	V2
CLS606			P	P	P		P		P	P	
CLS607		M	M	M	M	M	M	M	M		M
Track Specific											
CLS621	P				P		P	P			P
CLS622	P			P	P	P		P		P	
CLS623		P		P	P		P		P		P
CLS624		M		M	M	A			M		M
CLS625		M		M	M		M	M			M
CLS626	M	M		M			M	M			M
CLS627		M			M	M	M		M		M

Course code & No.	Program Learning Outcomes TRACK: M. Sc CLS in Haematology and Blood Transfusion										
	Knowledge and understanding		Skills							Values, Autonomy & Responsibility	
	K1	K2	S1	S2	S3	S4	S5			V1	V2
Common courses											
CLS601	I	I			I		I	I			I
CLS602		I	I		I		I	I		I	
CLS603		I		I			I	I		I	
CLS604		I	I		I			I	I		I
CLS605		I		I	I			I		I	
CLS606			P	P	P		P		P	P	
CLS607		M	M	M	M	M	M	M	M		M
Track Specific											
CLS631	P			P	P	P	P	P			P
CLS632		P		P		P	P	P			P
CLS633		P		P	P	P	P		P		P
CLS634		M		M	M	M	M		M		M
CLS635		M		M	M	M	M	M		M	M
CLS636	M	M		M		M	M	M			M
CLS637		M			M	M	M		M		M

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. Badr M. Alshehri	Ph.D	Molecular Biology - Immunology	Associate Professor	Saudi Arabia
3	Dr. Mohammed Alaidarous	Ph.D.	Biotechnology	Associate 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	Associate Professor	Saudi Arabia
10	Dr. Faiz Alghofaily	Ph.D.	Medical Microbiology	Assistant Professor	Saudi Arabia
11	Dr. Samy Almalki	Ph.D.	Molecular Immunology	Assistant 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	Associate Professor	India
16	Dr. Shabir Ahmad Mir	Ph.D.	Biochemistry and Molecular Biology	Associate Professor	India
17	Dr. Kamal shaker	Ph.D.	Parasitology	Lecturer	Egypt
18	Mr. Rasheed Alsalhi	M. Sc.	Infectious Diseases	Lecturer	Saudi Arabia
19	Dr. Hadeel Alyuonbawi	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
20	Dr. Hind Albadrani	Ph.D.	Molecular Immunology	Assistant Professor	Saudi Arabia
21	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

For contact and further details:

MANUAL OF MEDICAL LABORATORY SCIENCES	
VERSION	2
DATE	
RECOMMENDED BY	DEPARTMENT COUNCIL
APPROVED BY	HEAD OF DEPARTMENT

Dr. Mohammed Alaidarous
Head of the Department

College of Applied Medical Sciences,

Majmaah University

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