1	Program Title	Master's degree (MSc.) in Medical Laboratory Sciences
2	Program Code	
3	Awarding Institution	The University of Jordan
4	Level of Study	Postgraduate
5	Final Qualification	Master's degree (MSc.) in Medical Laboratory Sciences
6	Faculty	School of Medicine
7	Department	Department of Pathology, Microbiology and Forensic Medicine
8	Other Department(s) involved in teaching the program	Department of community medicine Department of Physiology and Biochemistry
9	Mode of Attendance(e.g., full time)	Full time
10	Duration of the Program	The upper limit for obtaining the master's degree is six semesters (article No. 6, Regulations of granting a master's degree at the University of Jordan)
11	Credit hours/ contact hours	33 credit hours
12	Language of Instruction	English
13	No. and date of approval by the Ministry of Higher Education	
14	No. and date of national accreditation of the program	
	Program capacity of students/ year	
	Other accreditations of the program	
15	Date of production/revision	Revised: 19-03-2019
16	No. of current students	
17	Program Directors (name, phone numbers & email)	-Azmi Mahafzah, MD PhD. - mahafzaa@ju.edu.jo +962777352233

18. Background to the program and subject area:

The Master's in Medical Laboratory Sciences degree offers advanced knowledge and practical training to prepare students for a successful career in the clinical laboratories, through improving the quality and efficiency of the diagnostic process. In addition, the program helps the students to understand the importance of scientific research, develop an approach to properly formulate research questions and to comprehensively review the literature with critical appraisal of recent scientific articles. Moreover, the program helps the students to develop oral and scientific communication skills, as well as scientific writing skills.

19. Vision and Mission statements of the program:

Vision: To be the among the most distinguished Medical Laboratory Sciences programs in the region.

Mission: To prepare the postgraduate students for a successful career, clinically and in scientific research.

Values: Excellence, respect, dedication and service.

20. Reasons behind developing this program:

National and regional need for Medical Laboratory personnel with advanced knowledge and skills in clinical laboratory diagnostics and with ability to conduct scientific research.

21. Program aims:

To enhance patient care by preparing postgraduate students with advanced knowledge of disease and improved technical ability to diagnose disease. In addition, the program aims to help the students to generate novel and interesting research.

22. Program Intended Learning Outcomes:

At the successful completion of the Master's degree (MSc.) in Medical Laboratory Sciences program, the student should be able to:
At the successful completion of the Master's degree (MSc.) in Medical Laboratory Sciences program, the student should be able to: 1. Use advanced knowledge and technology in Microbiology, Immunology, Clinical Chemistry, Haematology and Molecular Biology to implement various types of diagnostics in the Clinical Laboratories. 2. Analyse professionally patients' samples using a full range of testing in the contemporary Clinical Laboratory which include: chemical, haematological, immunological, and microbiological procedures. 3. Think critically, interpret and analyse results, and solve problems in the Clinical Laboratories. 4. Collect effectively epidemiological related data to investigate potential microbial epidemics. 5. Use appropriate technology in laboratories to monitor biomedical product contamination. 6. Design and carry out a scientific research projects and produce well-constructed and organized scientific papers or thesis in the field of medical laboratory sciences. 7. Apply safety and governmental regulations and standards as applied to the Clinical Laboratory practice. 8. Utilize ethical responsibility to preserve patient confidentiality and privacy and ensure accurate and ethical patient data transfer. 9. Show commitment and interest in continued education, teamwork, and implementation of the standards of quality assurance in different disciplines of the Clinical Laboratories. 10. Communicate effectively and present seminars to professional standards and prepare and carry out teaching sessions to both small and large groups of students.

23. Entrance Requirements

Areas of specialty for admission to this program includes; respectively:
Holders of the Bachelor's degree in:
A. Doctor of Medicine (M.D.) or equivalent.
B. Medical Technology or Medical Laboratory Sciences.
C. BSc in Pharmacy or PharmD.
D. Biological Analysis.

24. Teaching, learning and assessment methods:

Development of the learning outcomes is promoted through the following teaching and learning methods:

- Didactic sessions including lectures and seminars.
- Engagement in Clinical Laboratory practical sessions including performing laboratory testing under supervision.

Opportunities to demonstrate achievement of the learning outcomes are provided through the following assessment methods:

- Written Exams (midterm and final), oral exam, practical exam and weekly quizzes for each course.
- Public defence of Master's thesis.
- The comprehensive exam.

25. Reference points:

The learning outcomes have been developed to reflect the following points of reference:

NA

26. Four prestigious universities have the same programme

NA

27. Program regulations:

This plan conforms to regulations of granting a master's degree at the University of Jordan issued by the Deans' Council, according to Article (3/A) of the bylaws of granting scientific degrees, honorary degrees and certificates at the University of Jordan.

Link: http://graduatedstudies.ju.edu.jo/Regulations%20and%20instructions/Master's.pdf

28. Study plan:

University and School requirements for **Thesis Track**:

The Study plan: Studying (33) credit hours as follows:

1. Obligatory Courses (15) credit hours:

Course No.	**Course Title**	**Credit hours.**	**Theory**	**Practical**	**Pre-requisites**
New Number	Diagnostic Microbiology	3	2	1	-
0504712	Diagnostic Immunology and Serology	3	2	1	-
0504713	Clinical Chemistry	3	2	1	-
0504714	Diagnostic Hematology	3	2	1	-
0505704	Research methods	3	3	-	-

2. Elective Courses (9) credit hours from the following:

Course No.	**Course Title**	**Credit hours**	**Theory**	**Practical**	**Pre-requisites.**
0504715	Blood Banking and Blood Transfusion	3	2	1	0504712
0504716	Diagnostic Virology	3	2	1	Diagnostic Microbiology
0504717	Diagnostic Bacteriology	3	2	1	Diagnostic Microbiology
0504718	Pathology	3	2	1	-
0504719	Diagnostic Parasitology	3	2	1	Diagnostic Microbiology
0504723	Diagnostic Molecular Biology	3	2	1	-
0301737	Biostatistics	3	3	-	-
0504724	Molecular genetics	3	2	1	-
0505708	Epidemiology of Infectious Diseases	3	3	-	-

3. Thesis (0504799): (9) credit hours.

University and School requirements for **Non-Thesis Track**:

The Study plan: Studying (33) credit hours as follows:

1. **Obligatory Courses (24) credit hours:**

Course No.	Course Title	Credit hours	Theory	Practical	Pre-requisites
New number	Diagnostic Microbiology	3	2	1	-
0504712	Diagnostic Immunology and Serology	3	2	1	
0504713	Clinical Chemistry	3	2	1	-
0504714	Diagnostic Hematology	3	2	1	-
0504715	Blood Banking and Blood Transfusion	3	2	1	0504712
0504717	Diagnostic Bacteriology	3	2	1	Diagnostic Microbiology
0504719	Diagnostic Parasitology	3	2	1	Diagnostic Microbiology
0505704	Research Methods	3	3	0	-

2. Elective Courses (9) credit hours from the following:

Course No.	Course Title	Credit hours	Theory	Practical	Pre-requisites
0504716	Diagnostic Virology	3	2	1	Diagnostic Microbiology
0504718	Pathology	3	2	1	-
0504723	Diagnostic Molecular Biology	3	2	1	-
0501701	Toxicology	3	3	-	-
0505708	Epidemiology of Infectious Diseases	3	3	-	-
0301737	Biostatistics	3	3	-	-
0504724	Molecular genetics	3	2	1	-
0505703	Health Administration	3	3	-	-

3. Comprehensive Examination (0501798).

29. Field Experience:

Description, timing and number of credit hours: NA Study is totally carried out within the School of Medicine, the University of Jordan and the Jordan University Hospital, affiliate institutions, or approved Universities for selected research projects.

30. Project/research:

Description, timing and number of credit hours: The student in the thesis track will be required to carry out a proposed supervised research project. The proposed project is submitted to a committee formed for this purpose. After approval by the committee the students carry out the research projects. Then, the student should submit a written thesis including the results of the research project. Then, the student should submit a written thesis including the results of the research according the regulations of Jordan University of date is set for discussion by an examining committee according to Jordan University regulations. Thesis is considered as (9) credit hours with registration number (0504799).

31. Program Learning Outcome Mapping Matrix

Learning outcome / Course code		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6...	PLO 7	PLO 8	PLO 10	PLO 10
0504711	Diagnostic Microbiology (1)	*	*	*	*	*		*	*	*	*
0504712	Diagnostic Immunology and Serology	*	*	*						*	*
0504713	Clinical Chemistry	*	*	*				*		*	*
0504714	Diagnostic Hematology	*	*	*				*		*	*
0505704	Research methods							*		*	
0504715	Blood Banking and Blood Transfusion	*	*	*				*		*	*
0504717	Diagnostic Bacteriology	*	*	*	*	*		*		*	*
0504719	Diagnostic Parasitology	*	*	*	*						
0504716	Diagnostic Virology	*	*		*	*					
0504718	Pathology			*							*
0504723	Diagnostic Molecular	*	*	*						*	*
0501701	Toxicology							*			*
0505708	Epidemiology of Infectious				*				*	*	
0301737	Biostatistics				*		*				
0504724	Molecular genetics									*	
0505703	Health Administration							*	*		*

32. Student development over the course of study

The program comprises courses designed to support the progress in knowledge and technical skills of postgraduate students. Development of knowledge and skills will be monitored by the course leaders through direct feedback from the students and through exams to ensure the competence of the students. The studies will culminate in the ability of the student in the thesis track to successfully defend the thesis and for the non-thesis track, the ability to pass the comprehensive exam.

33. Educational facilities and support for the program teaching-learning process

a- Facilities and laboratories (include name of lab, its area and student's capacity): Laboratories at the Department of Pathology, Microbiology and Forensic Medicine at the School of Medicine, and the Clinical laboratories at Jordan University Hospital. Outpatient clinics building, 3rd floor.

b- Supporting staff (include name, work place, position, specialty):

- Reham F. AL shehabi, Lab supervisor. School of Medicine, UJ
- Hanan Al amin, Lab supervisor. School of Medicine, UJ
- Rawan Abu Zineh, Lab technician. School of Medicine, UJ
- Senior residents in Clinical Laboratory/Microbiology and Immunology. Jordan University Hospital.

c- Tools and equipment:

NA

d- Faculty members:

No.	Name	D.O.B	Nationality	Specialty & sub-specialty	University of graduation & Year of graduation (of most recent qualification)	Qualifications	Academic rank, date obtained and donor university	Course/s that will be taught
1.	Azmi Mahafzah	1953	Jordanian	Microbiology & Immunology/ Clinical Virology	American University of Beirut Yale University, 1988	M.D., Ph.D.	Professor, 2009, UJ	Diagnostic Microbiology Diagnostic Bacteriology Advanced Virology Diagnostic immunology and serology Blood Banking and Transfusion Medicine
2.	AbdelKader Battah	1957	Jordanian	Toxicology/Forensic Toxicology	University of Glasgow, 1989	M.D., Ph.D.	Professor, 2012, UJ	Toxicology
3.	Kamal Hadidi		Jordanian	Toxicology/Forensic Toxicology	University of Glasgow, 1989	PhD	Professor	Toxicology
4.	Mousa Al Abbadi	1962	Jordanian	Pathology	University of Florida	American Board	Professor 2007	Pathology
5.	Maha Shomaf	1962	Jordanian	Histopathology	Withington hospital, 1995	M.D.	Associate Professor, 2006, UJ	Blood Banking & Transfusion Medicine

6.	Nader Araydah		Jordanian	Microbiology/Immunology	Wayne State University, 1999	Ph.D.	Associate Professor, 2018, UJ	Parasitology
7.	Nisreen Abu Shahin	1978	Jordanian	Surgical Pathology	University of Arizona, 2012	M.D.	Assistant Professor, 2012, UJ	Pathology
8.	Tariq Al-Adily		Jordanian	Surgical Pathology /Hematopathology	The University of Texas, 2013	M.D.	Assistant Professor, 2013, UJ	hematology
9.	Ahmad Mansour	1982	Jordanian	Pathology (AP/CP) /Hematopathology	Indiana University, 2015	M.D.	Assistant Professor, 2016, UJ	Diagnostic Hematology
10	Mohammad Al Madadha		Jordanian	Molecular Microbiology/Molecular diagnositics	Leicester University	M.D, PhD	Assistant Professor, 2017, UJ	Diagnostic Molecular Biology
10.	Malik Sallam	1983	Jordanian	Microbiology & Immunology/ Clinical Virology	Lund University, 2017	M.D., Ph.D.	Assistant Professor, 2017, UJ	Diagnostic Immunology and Serology
11	Bilal Al Azab		Jordanian	Molecular Biology		PhD	Assistant Professor	Diagnostic Molecular Biology Molecular Genetics

e- Library materials:

Library material	No.	Available for		
		Faculty members	Students	Faculty and students
Books	>10			×
Journals	>10			×
E-books	>100			×
E-journals	>300			×
Databases	3			×

f- Entities that offer facilities to receive practical and field experiences:
NA

34. Ways that are followed for program quality assurance:

- What processes are followed for evaluation of teaching and learning experiences, assessment methods, and the effectiveness of the curriculum or study plan:
  -Feedback from the students through filling the course assessment form issued by the Accreditation and Quality Assurance Center at JU.
  -Departmental meetings for discussion of results and performance of the students and re-evaluation of the study plan.

- What processes are followed to obtain feedback from students enrolled in the program about the quality of teaching and learning experiences provided:
  -The course assessment form issued by the Accreditation and Quality Assurance Center at JU.
  -Personal communication of the students with the program director, course leaders and other members at the School of Medicine.

- What processes are followed to develop the skills, knowledge and capabilities of faculty members:
  -Training courses and workshops carried out by JU for faculty members.
  -Conference attendance sponsored by JU.

- What indicators and standards are used to guarantee commitment to quality in the program:
  -The standards applied by the Accreditation and Quality Assurance Center at the University of Jordan.

35. An official document of statistics and surveys issued by official bodies show the unemployment rate for this specialization

Not available

Name of Program Director: Prof. Azmi Mahafzah **Signature:**

Date: 3/4/2019

Head of curriculum committee/Department: **Signature:**

Head of Department: Professor Abdelkader Battah **Signature:**

Head of curriculum committee/Faculty: **Signature:**

Dean: **Signature:**

Copies to:
-Head of the Department
-Assistant Dean for Quality Assurance
-Program File