Kingdom of Saudi Arabia
Ministry of Education
Umm Al Qura University
Faculty of Applied Medical Sciences
Vice Dean for Hospital Affairs
Laboratory Medicine Program

Laboratory Medicine Intership

Internship Booklet

Kingdom of Saudi Arabia
Ministry of Education
Umm Al-Qura University
Faculty of Applied Medical Sciences
Department of Laboratory Medicine

المملكة العربية السعودية
وزارة التعليم
جامعة أم ا لقرى
كلية العلوم الطبية التطبيقية
قسم طب المختبرات

Laboratory Medicine Internship

Intern Name	
University ID	
Training Year	
Training Hospital	

Preface

Clinical Laboratory practice/internship is an integral part of the laboratory medicine program and is designed to provide interns with an opportunity to integrate and apply previously acquired knowledge and technical skills in actual clinical settings.

This internship booklet is prepared with the intention to provide orientation to interns about various tasks to be performed and/or observed in different disciplines during one year internship at the hospital. The main goal of the internship is to acquire necessary practical skills in performing various laboratory tests in different disciplines at laboratory medicine department in hospitals that will contribute directly to efficient laboratory diagnosis and improve health care services.

The beginning of the booklet entails the description of Laboratory Medicine program stating its mission, goals and objectives. Following this, particulars of internship and general laboratory safety procedures are stated which each intern has to follow in addition to the instructions issued by the training site.

The main contents of this booklet are the tasks list for each discipline which interns are expected to either perform or observe during the training. They need to fill tasks list in each discipline during their training at each rotation.

It is essential to evaluate intern's professional behavior and technical competencies that are expected to achieve on completion of his/her internship. The later part of the booklet contains samples of various forms (Forms #1 to Form #5) including supervisor evaluation form and intern feedback form.

CONTENTS

INTERN INFORMATION

Name	*(Arabic):*
	(English):
University ID	
National ID	
Mobile	
In case of emergency	**Mobile No.**
	Relation:
E-mail	
Address	

LABORATORY MEDICINE PROGRAM

1. Vision, Mission, Goals, Objectives and Values of the Program

1.1. Vision:

The laboratory medicine program is to be one of the leading programs at the national and regional levels recognizing our graduates for their professional competence, leadership quality, and competitive research.

1.2. Mission:

The mission of Laboratory Medicine Program at Umm Al-Qura University is to provide innovative curricula responsive to the needs of the profession that result in clinical laboratory professionals able to join immediately the health care field with the theoretical knowledge and the technical skills necessary to provide quality laboratory services. Moreover, our graduates will be prepared to be able to adapt to the future changes in the health care system and clinical laboratory science as well as the changing needs of the growing diverse society in Holy Makkah.

1.3. Goals:

- To obtain national and international academic accreditation.
- To prepare competent laboratory specialists who have acquired necessary knowledge, skills, training and proficiency in the laboratory diagnosis of various diseases.

1.4. Objectives:

Upon completion of laboratory medicine program our graduates are expected to:

1. Have in-depth knowledge of the relationships between laboratory data and pathologic processes, and how laboratory data relate to health and disease.
2. Have the talent to design, evaluate and implement new

methods or protocols in different clinical laboratories.
3. Have experience with the performance and quality control of routine and specialized medical laboratory testing procedures and an understanding of the theoretical basis of these procedures.
4. Have experience trouble-shooting and resolving typical problems in the clinical laboratory and are familiar with laboratory quality assurance, laboratory safety, laboratories regulations, information systems, management, research design and educational methodology.
5. Have the ability to work independently and as a team member to perform critical thinking and problem solving skills in different diagnostic laboratory domains.
6. Have the capability to demonstrate an attitude of professionalism when working with colleagues with all other health professional staff working in the hospital.

1.5. Values:

Laboratory Medicine Program observes following values:

1. Observance of Islamic values
2. Professional commitment and ethics
3. Respect and appreciation of differences
4. Appreciation of social responsibilities
5. Life-long learning
6. Excellence in all aspects, particularly in teaching, training and research
7. Transparency

1. Program Description:

Faculty of Applied Medical Sciences, Umm Al-Qura University offers the program leading to Bachelor degree (B.Sc.) in Laboratory Medicine. The program provides students a strong foundation in the theory, training in clinical laboratory, research and managements domains.

The program comprises of eight semesters plus one year internship (hospital laboratory based training), after which the degree of B.Sc. Laboratory Medicine is awarded to successful candidates. A student undertaking this program must complete a total of 132 credit units which are distributed as 20 credit units of university requirements, 29 college requirements and 83 credit units program requirements.

2.1. The language of teaching: English.

2.2. In addition, students are expected to develop certain academic skills such as essay and report writing, presentation skills and statistical analysis. These essential skills allow the students to complete two important components of the program:

1.1.1. The Research Project: This 10 credit units' course is offered in 7th semester and completing by the end of 8th semester. The students are provided with a list of projects proposals to choose from after agreement with supervisors in the departments. It is expected that the students will apply knowledge and skills learnt during this course such as research methodology, data analysis and interpretation and presentation of research results during the experimental work of their research project. At the end of the course students need to submit a thesis and give a seminar on their project and defend their work in discussion.

2.2.2. The Internship: This one full year (summer, first and second semesters) professional training is offered to each intern in one of the general or specialized government hospitals. During this year, students undergo in-depth training in all the sections of diagnostic laboratory of the hospital.
The supervision of interns is done at two levels: one by the hospital laboratory training coordinator and other by the faculty internship coordinator who reports to Vice Dean for Hospital Affairs. During training at hospital laboratory, student is supervised on daily basis by the laboratory supervisor for particular rotation. The internship monitoring team of the program visits regularly every three month to training sites and meet the students and their supervisors to discuss their progress and addresses issues, if any.

INTERNSHIP SPECIFICS

Introduction:

Internship is an integral part of the program in Laboratory Medicine and is designed to provide interns with an opportunity to integrate and apply previously acquired knowledge and technical skills in actual clinical settings. Under the guidance of experienced Medical Laboratory Professionals and other qualified laboratory personnel and health professionals, interns learn more about diagnostic test procedures, quality control methods and programs, and instrumentation in the clinical laboratory. They also gain an understanding of the roles and functions of the Medical Laboratory Professionals.

The internship provides applied learning experiences during which the intern should:

1. Practice and acquire clinical laboratory skills
2. Practice skills in problem-solving
3. Perform quality control procedures
4. Learn and adapt new procedures
5. Operate and maintain various laboratory machines and instruments
6. Understand the responsibilities, roles, and functions of the Medical Laboratory Professionals
7. Report accurate and precise results to supervisors
8. Learn how to correlate tests results to patient clinical diagnosis

The internship program is conducted in the affiliated hospital laboratories of the program, where interns learn by participating in the workload of a supervising technologist/specialist/consultant. Emphasis in each internship discipline is given on: a) organization of work, b) use of automated instrumentation, c) the relation of laboratory results to patient diagnosis, and d) the establishment and use of programs for quality control and preventive maintenance of laboratory instruments.

I. Internship eligibility criteria:

Entry in internship is allowed only after successful completion of all prerequisite courses of laboratory medicine program specified.

II. Internship duration:

The training period for the internship is one calendar year. It is offered in 5th academic year of the program and begins two weeks after the final examination of 4th academic year.

III. Internship disciplines:

The internship program is spread over one year during which each intern takes training in various disciplines of laboratory medicine e.g., main specimen reception, phlebotomy, microbiology, parasitology, biochemistry, haematology, blood bank, serology and immunology, histo and cytopathology and molecular diagnostics. The schedule of training for each discipline is given in forthcoming section. In major specialty, training period is of 12 weeks.

The tasks (what intern may learn) for each discipline is listed in different sections. The intern will **"perform and/ or observe"** the task, and therefore, should tick (√) the appropriate column for each task. Each task needs to be signed by the training supervisor. If any task is not applicable, then column should be marked "N/A" (not applicable).

IV. Internship rotations:

Rotations in the internship year depend on the program needs. Laboratory Medicine program is multidisciplinary in training. Therefore, number of rotations varies depending on the availability of disciplines in a hospital. The intern of laboratory medicine can use more than one hospital or central laboratory to complete his/her internship in all required disciplines.

V. Interns' responsibilities:

Each intern should have two booklets; a) internship policy and general regulations booklet and b) program specific internship booklet that contains the tasks for each discipline. Each intern must go through both booklets thoroughly.

Internship policy and general regulations booklet has the details of general policy and rules and regulations of internship including vacations that all interns have to follow. In program specific booklet each intern must complete the tasks list on daily basis which is to be signed by the immediate supervisor, if possible on daily basis, otherwise on weekly basis. All tasks given in the internship booklet

will be reviewed by the internship monitoring team on their periodic visits to training sites. Interns must know that filling the tasks list carries 5 marks. Any intern not filling tasks list of the disciplines in which they are trained will either lose these marks or get less marks if they have filled partially.

During internship period interns have to demonstrate following responsibilities:

1. All interns should produce required vaccination document.
2. All interns should provide Basic Life Support (BLS) certification at the beginning of internship. The guidance for obtaining BLS certification will be provided by the Vice Dean for Hospital Affairs.
3. Perform training in accordance with laboratory policies and procedures at each clinical laboratory.
4. All interns should comply with dress code specified by the training site.
5. Interns usually spend at least 8 hours daily, 5 days/week or follow the working hours of clinical site where intern is being trained.
6. Interns must refrain from unsafe and unprofessional conduct.
7. Show professional behavior as Medical Laboratory professional.
8. Perform assigned work with responsibility.
9. Adhere with hospital rules and regulations.
10. Attempt to establish good working relationships with all personnel with whom they come in contact during the internship rotation.

VI. Internship supervision and monitoring:

The supervision of interns is done at two levels; one by the hospital laboratory training coordinator and other by the program internship coordinator designated by the faculty for this purpose and report to Vice Dean for Hospital Affairs. During training at hospital laboratory, intern is supervised on daily basis by the laboratory supervisor for particular rotation.

The internship monitoring team visits training sites regularly to meet the interns and their supervisors to discuss their progress and addresses issues, if any. However, urgent issues can be reported to internship coordinator whenever is required. The monitoring team submits the report of each visit to program internship coordinator using a prescribed form **(Form #5)**. A progress report of the internship is submitted by the program internship coordinator to Vice Dean for Hospital Affairs on quarterly basis.

VII. Interns' Evaluation:

a. Evaluation of interns by Laboratory Supervisors:

Professional behavior and technical performance are evaluated using an evaluation form designed to reflect interns competencies that are expected to achieve on completion of their Laboratory medicine internship. Evaluation by hospital laboratory supervisors has 80% weightage.

This evaluation is organized into two parts: (1) general clinical competencies i.e., affective behavior while at the rotation site and (2) discipline competencies i.e., ability to demonstrate basic theoretical and practical and technical ability in performing various clinical laboratory procedures. Both parts are rated on percent competency, including assessment of activities that are in the normal course of laboratory's daily routine and that they would normally attend or participate in seminars/ lectures, in-service workshops, etc.

At the end of each rotation intern will be evaluated by his/her immediate supervisor using an evaluation form **(Form #1)** provided by the Faculty Internship Coordinator. The supervisor will submit the evaluation form for each intern to the Laboratory Training Coordinator. A summary of internship evaluation **(Form #2)** will be prepared by the Laboratory Training Coordinator and at the end of internship period evaluation report of each intern will be submitted to Hospital Training and Education Office which will submit this report to Vice Dean for Hospital Affairs of the Faculty.

b. Evaluation of interns by program internship committee:

The evaluation of interns by program internship committee has 20% weightage. Each intern is evaluated by this committee using a prescribed form **(Form #3)**. An intern must fill this form at the end of internship and submit to program internship committee for evaluation. This form has three sections:

i. **Attending and participating in scientific events**: Intern will be evaluated for his/her professional

development and continued medical education on the basis of his/her participation or attendance in faculty/ university scientific conferences, seminars, symposia and workshops. Each intern must fill the details of his/her participation or attendance and attach copy of certificates when submitting the booklet at the end of internship. This section carries 10 marks. Failing to do so will lose these marks.

ii. Commitment to fill tasks list in internship booklet: Intern's needs to fill the assigned tasks list for each discipline in which he/she is trained and signed by the training supervisor as shown in internship booklet. This section carries 5 marks. The program internship committee will check this and assign marks. Any intern not filling the tasks list completely will lose these marks or get less mark.

iii. Commitment to fill intern feedback form: Filling intern feedback form **(Form #4)** at the end of each discipline of the internship is necessary and carries 5 marks. Any intern not filling intern feedback form for the disciplines in which he/she is trained will either lose these marks or gets less mark if filled partially.

VIII. Evaluation of training rotations by interns:

Interns' evaluation of rotation sites is a part of our reciprocal evaluation procedure. Interns must fill intern feedback form **(Form #4)** at the end of each rotation which is placed immediately after the tasks list of each discipline. Interns must make sure that intern feedback form for all disciplines are filled in which they trained.

IX. Internship grading:

Grades for the Laboratory Medicine internship are calculated using Intern Evaluation Form **(Form #1 and #2)** and evaluation by program internship committee **(Form#3).** Percent/grades are determined based on the performance in each of the components. The final percentage out of 100 is worked out as follows: 80% weightage will be given to hospital laboratory evaluation and 20% weightage for program internship committee evaluation. The minimum of 60% is required for successful completion of internship. The percentage component of grades is then converted to letter grades. University grading system is used to determine the

grade (please see the table below).

Percentage obtained	Grade	Letter Grade
95 to100	Exceptional	A^+
90 to 94	Excellent	A
85 to 89	Superior	B^+
80 to 84	Very Good	B
75 to 79	Above Average	C^+
70 to 74	Good	C
65 to 69	High pass	D^+
60 to 64	Pass	D
Less than 60	Fail	F

Note: ***All forms are available in the "Forms" section.***

X. Award of internship certificate:

After successful completion of training, intern should submit the **"internship booklet"** duly signed by the supervisors for each rotation to program internship coordinator. The intern will be granted a certificate by the Faculty after approval of laboratory medicine internship committee. The certificate will provide the overall grade obtained by the intern in the training as well as the details of different disciplines and the % of the marks obtained in each discipline.

Note: ***Any intern who fails to submit internship booklet will not be awarded internship completion certificate***.

AGREEMENT LETTER

Dear Intern,

Please read carefully Rules, Regulations and Guidelines stated for internship year. Sign the statement below to ensure that you understood all contents of internship and agree to adhere to the Rules, Regulations and Guidelines.

I have read, understood, and agree to adhere to the Rules, Regulations and Guidelines stated in Laboratory Medicine Internship Booklet.

Intern Name: _____

University ID No: _____

Signature: _____

Umm Al-Qura University
Faculty of Applied
Medical Sciences
Department of
Laboratory Medicine

جامعة أم القرى
كلية العلوم الطبية التطبيقية
قسم طب المختبرات

PROPOSED TRAINING SCHEDULE

Internship Discipline	Number of Weeks
Main specimen reception	**1-2**
Phlebotomy	**1-2**
Microbiology	**5-6**
Parasitology	**2-3**
Biochemistry	**5-6**
Hematology	**4-5**
Blood bank	**5-6**
Serology and immunology	**3-4**
Histo and cyto-pathology	**3-4**
Molecular diagnostics	**1-2**
Major Specialty	**10-12**
Note: ***The total period of internship should NOT be less than 48 weeks***	

RAMADAN AND HAJJ HOLIDAYS

NOTE: *Interns should follow Hospital rules and regulations for Ramadan and Hajj holidays.*

GENERAL LABORATORY SAFETY PROCEDURES AND RULES

Laboratory safety

All interns must read and understand the information in this document with regard to laboratory safety and emergency procedures prior to the first laboratory session. Interns must adhere to written and verbal safety instructions throughout the internship period. Although safety information will be provided by the hospital safety officer before the beginning of internship, following general safety guidelines will help you to work in safe environment during the internship period. Discipline specific safety precautions will be provided by the specific sections such as microbiology, histopathology etc.

	Tasks
A.	***General laboratory safety***
1	Always wear laboratory coat or apron while working. After work, leave the lab coat in an assigned cabinet or area.
2	Must wear personal protective equipment (gown, gloves, masks, face shield or glasses etc.) when working with hazardous or toxic materials and change when contaminated.
3	Shoes should be fluid impermeable material and cover the entire foot.
4	The application of cosmetics within the laboratory is strictly prohibited.
5	Contact lenses should not be worn while working in the laboratory.
6	Always cover any cut, insect bite or open wound with water-proof adhesive dressing.
7	Gloves should be removed (unless stated to wear) before handling telephones, computer keyboards, laboratory equipments, doorknobs, etc.
8	Eating, drinking, smoking and chewing gum are prohibited in the laboratory.
9	Storage of food or drink is not allowed in laboratory refrigerators.
10	Mouth pipetting must not be done.
11	Laboratory working surfaces shall be decontaminated with a disinfecting solution after the spill of blood or body fluid.
12	Needles should not be recapped or removed from a disposable syringe.
13	Discard used syringes, needles and other sharps (glass slides, glass pipettes, knives, etc.) in specified containers.
14	If equipment shows any problem while being used, report immediately to your supervisor. Never try to fix the problem yourself.
15	Follow the standard safety precautions when using a centrifuge.
16	Hands should be washed with soap and water after handling hazardous and infectious materials.
17	Biological safety cabinets (Class I or II) should be used to avoid aerosolization or droplets.
18	Equipment contaminated with blood or other body fluids should be decontaminated and cleaned before use.
19	All waste and contaminated materials (clinical specimens, bacterial cultures) should be disposed in appropriate containers.
20	Inform your supervisor about any accidents, spills or potential hazard.

	Tasks
B	***Chemical safety***
1	Know the color coding and numerical rating of chemicals or materials for health hazard, fire hazard, reactivity hazard and specific hazard (reactivity with water) (NFPA label).
2	Use volatile and flammable compounds only in a fume hood.
3	Never return unused chemicals to their original container.
4	Dispose of chemical waste in proper containers according to manufacturer's instructions.
C	***Emergency response***
1	Read safety and fire alarm posters and follow the instructions during an emergency.
2	Know the location of fire extinguisher, fire exits, and first aid kit and eyewash solution in your lab and know how to use them.
3	Know the building evacuation procedure in an emergency.

Intern Name: _____

University ID: _____

Signature: _____

Laboratory Training Coordinator:
Name: _____

Signature: _____

Date: _____

Internship Guidelines for Laboratory Disciplines

MAIN SPECIMEN RECEPTION

Name of Hospital: _____ Section: **Main specimen reception**
Intern Name: _____University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire knowledge and skills of proper handling and documentation of clinical specimens at reception during the internship period.

Objectives:

1. To know the guidelines and procedures of handling and documentation of clinical specimens.
2. To apply specimen acceptance/rejection criteria.
3. To familiarize with computerized system of specimens' entry and distribution to respective laboratories.
4. To categorize specimens according to their turn around time.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A".
Each task to be signed by the trainer during training of the trainee:

A. **Documentation:**

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Know the guidelines/procedures and forms requirements for entry of specimens in available system.			
2	Apply section safety policies and procedures.			
3	Know the procedure of reporting of an incident.			

B. Specimen management:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Follow specimen receiving procedures.			
2	Categorize specimens according to their turn around time.			
3	Apply specimen acceptance/rejection criteria.			
4	Sorting out of specimens according to laboratory policies.			
5	Report specimen problem, if required.			

C. Laboratory information system (LIS):

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Orientation of LIS for specimen entry e.g., Medica plus, oracle			
2	Follow the test order status.			
3	Learn to generate daily data of specimens received at reception.			

D. Miscellaneous:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Acquaint with Lab organization and work flow.			
2	Use appropriate labels (barcode) for specimen tubes and containers.			
3	Appropriate timing of specimens' delivery to departments.			
4	Learn proper communication with other departments in the hospital.			
5	Know the procedures of inventory, ordering and receiving supplies.			
6	Know the locations of equipments and supplies in the unit.			
7	To know the send out procedure for unavailable tests.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section: Main specimen reception**

1. Intern Name:_____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____(No of weeks) _____
4. Name(s) of the supervisor under whom you were trained:

_____ _____
_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?

- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?

- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?

- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____To _____

Date of Evaluation: _____

PHLEBOTOMY

Name of Hospital: _____ Lab Section: **Phlebotomy**
Intern Name: _____University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of proper phlebotomy techniques during the internship period.

Objectives:

1. To disinfect the blood collection site with appropriate disinfectant.
2. To know how to apply a tourniquet and for desirable time.
3. To detect the preferred venous access sites.
4. To insert the needle properly for blood withdrawal.
5. To take care of the patient to avoid complications during and after blood collection process.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A".

Each task to be signed by the trainer during training of the trainee:

A. **Preparation for blood specimen collection:**

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Ensure that the test request is ordered by the treating physician.			
2	Ensure proper patient identification, labeling of the tubes and review of request slip for the type of test requested.			
3	Pretest selection of blood withdrawal material.			
4	Identification of additive, additive function, volume and specimen considerations to be followed for each of the various color coded tubes (syringe system, vacutainer system).			
5	Register the specimens in the laboratory information system.			

B. Technique for blood specimen collection:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Ensure that the patient is well prepared prior to blood collection (adult, pediatric and infant).			
2	Proper application of tourniquet and knowledge of hazardous effects of prolonged tourniquet application upon laboratory values.			
3	Detection of preferred venous site and the factors to consider in site selection.			
4	Disinfection of blood collection site and proper insertion of the needle for blood withdrawal (adult, pediatric and infant).			
5	Special precautions for blood withdrawal and inoculation into appropriate culture media for microbiological investigations.			
6	Post withdrawal procedures for specimen (transport, preservation and storage).			
7	Post withdrawal observation and care of the patient.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ Lab Section: Phlebotomy_

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to ___ (No of weeks) _____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?

☐ Clearly discussed
☐ Clear to some extent
☐ Not clear

2. What is your opinion about training for interns in this section?

☐ Excellent training
☐ Good training
☐ Adequately planned training
☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?

☐ The responsibilities given to me were suited to my ability to handle them.
☐ Some of the responsibilities were above my ability to handle them.
☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this

section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. **Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.**

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

1. **What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?**

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____To _____

Date of Evaluation: _____

MICROBIOLOGY

Name of Hospital: _____ Lab Section: **Microbiology**
Intern Name: _____ University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of standard microbiological examinations during the internship period.

Objectives:

1. To select appropriate media for various clinical specimens.
2. To process specimens for isolation of pathogenic microorganisms.
3. To identify microorganisms encountered in the clinical laboratory.
4. To exhibit knowledge of environmental influences on microbial growth.
5. To differentiate between normal flora and pathogens.
6. To interpret antimicrobial sensitivity patterns.
7. To apply methods of sterile techniques in the laboratory at all times.

Tasks: The intern will observe and/or perform the following tasks. If any task is not applicable, please mark "N/A".

Each task is to be signed by the trainer during the training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply specimen acceptance/rejection criteria.			
2	Review specimen type, appropriateness of the container and quantity required.			
3	Examine the labeling of the container and request slip for the type of test requested.			
4	Register specimens in laboratory information system or logbook.			
5	Preparation of SENDOUT specimens.			

B. Media preparation:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Preparation of bacterial and fungal culture media used in routine microbiology laboratory e.g., SS agar, TCBS agar, Selenite F broth, alkaline peptone water, Sabouraud's dextrose agar etc.			

C. Techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Specimen inoculation and incubation:**			
1	Specimen inoculation on appropriate laboratory media using standard streaking technique.			
2	Incubation of inoculated plates at appropriate temperature and atmospheric condition (aerobic, anaerobic, CO_2).			
3	Selection of single colony of possible pathogen and streaking purity plates.			
II	**Gram staining:**			
1	Preparation of bacterial smear from pure growth and Gram staining of the smear using standard procedure.			
2	Examination of Gram stained slide to determine Gram reaction (G+ve or G-ve) and cell morphology and arrangement.			
III	**Special colony characteristic:**			
1	Examination of hemolysis on blood agar plate (alpha, beta, and gamma).			
2	Special odour produced by certain bacteria (fruity, fishy etc.).			
3	Examination of swarming growth.			
4	Examination of pigment production.			
5	Differentiation between lactose and non-lactose fermenting colonies.			
IV	**Important biochemical tests:**			
1	Catalase test *(to differentiate staphylococcus from streptococcus)*			
2	Coagulase tube test and staph latex kit *(to identify Staphylococcus aureus)*			
3	Spot oxidase test *(to help identify Neisseria, Pseudomonas and Vibrios)*			
4	Optochin disk *(to identify Streptococcus pneumoniae)*			
5	Novobiocin disk (*to differentiate S.epidermidis from S.saprophyticus)*			
6	Bacitracin disk *(to identify Group A Streptococci)*			
7	X and V factor disks *(to help identify Haemophilus species)*			
V	**Bacterial identification: kits and automated systems**			
1	Use of 0.5 McFarland standard			
2	Use of rapid identification kits: Analytical Profile Index (API) system e.g., API 20 E			
3	Use of automated system for bacterial identification e.g., Microscan, Vitek, Phoenix etc.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
VI	**Antibiotic susceptibility test: disk diffusion and automated system**			
1	Use of 0.5 McFarland standard.			
2	Use of Kirby Bauer disk diffusion method and recording and interpretation of susceptibility results.			
3	Use of automated system for antibiotic susceptibility e.g., Microscan, Vitek, Phoenix etc.			
4	E-test for detection of minimum inhibitory concentration (MIC).			
5	Detection of Extended spectrum β-lactamase (ESBL) producing organisms.			
6	Detection of Methicillin Resistant *Staphylococcus aureus* (MRSA).			

D. Special tasks for different benches:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Urine bench:**			
1	Application of semi-quantitative colony counting techniques for significant bacteriuria.			
2	Calculation of number of organism in a sample for significant bacteriuria.			
II	**Blood and other sterile body fluids bench:**			
a.	**Blood:**			
1	Placing blood culture bottles into available blood culture system (e.g., BACTEC, BACTALERT etc.)			
2	Processing of positive blood cultures on appropriate culture media for isolation and identification of pathogenic organism using appropriate procedures/system.			
b.	**Cerebrospinal fluid (CSF):**			
1	Use of latex agglutination technique for CSF specimen to detect possible causative agent.			
2	Gram staining of centrifuged CSF specimen (from deposit) for the type of organism.			
3	Immediate reporting of results of above two tests to laboratory supervisor for confirmation and reporting if needed.			
c.	**Other body fluids (e.g., peritoneal (ascitic) fluid):**			
1	Apply standard staining procedure (Gram stain and or AFB stain).			
2	Processing of specimens on appropriate culture media for isolation and identification of pathogenic organism.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
III	**General microbiology bench (swabs):**			
1	Inspection of request form for the type of specimen (pus, wound, throat, ear, eye, nasal, high vaginal swab etc.) and type of test requested.			
2	Direct microscopic examination of Gram stained smears and recording type of bacteria and other pathological cells.			
3	Differentiate between normal flora and possible pathogens.			
4	Identification of suspected pathogen using available identification system.			
IV	**Respiratory bench (Sputum and Endotracheal tube secretions (ETT):**			
1	Inspection of request form for the type of specimen (sputum or ETT) and type of test requested.			
2	Direct microscopic examination of Gram stained smears and recording type of bacteria and other pathological cells.			
3	Inoculation of specimen on appropriate laboratory culture media and incubation at suitable temperature for growth.			
4	Differentiate between upper respiratory tract normal flora and possible lower respiratory tract pathogens.			
5	Identification of suspected pathogen using available identification system.			
V	**Stool bench:**			
1	Processing of specimen on appropriate selective media for isolation of *Salmonella* and *Shigella* species.			
2	Processing of specimen on appropriate selective media for isolation of *Vibrio cholerae.*			
VI	**Mycobacteriology bench:**			
1	Use of required personal protective equipment (PPE).			
2	Preparation of specimens by decontamination concentration method.			
3	Preparation of specimen for immunofluorescence.			
4	Preparation of specimen for molecular diagnosis, if available.			
5	Ziehl-Neelsen (ZN) staining for acid fast bacilli (hot/cold method).			
6	Microscopic examination of ZN stained slide for the presence of acid fast bacilli.			
7	Inoculation of specimen on appropriate culture media (Lowenstein Jensen [LJ], Middlebrook) and observing growth.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
8	Immunofluorescence test and recording of result.			
9	Anti-mycobacterial sensitivity testing.			
VII	**Mycology bench:**			
1	Recognition of colony characteristics for yeast on culture media.			
2	Gram's staining for yeast.			
3	Confirmation of *Candida albicans* by germ tube test.			
4	Confirmation of other *Candida species* by available biochemical tests.			
5	Direct microscopic examination of dermatological specimens by KOH method.			
6	Inoculation of dermatological specimens on appropriate culture media for isolation of molds/filamentous fungi.			
7	Examination of macroscopic features of molds/filamentous fungi			
8	Tease mount with lacto-phenol cotton blue for examination of microscopic characteristics of molds.			

E. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Quality control for culture media prepared in the laboratory (sterility testing).			
3	Quality control of instruments (freezers refrigerator, incubators, autoclave etc.).			
4	Quality control for growth of organisms on culture media using standard organism.			
5	Quality control of sterilization procedure for freshly prepared laboratory media and decontamination of hazardous materials.			
6	Quality control of antibiotic disks by appropriate test.			
7	Quality control of the biological materials.			
8	Broad knowledge of infection control measures applied in microbiology lab.			
9	Quality control of staining reagents.			
10	Quality control of other reagents used in microbiology.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section: Microbiology**

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) _____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. **Do you feel that you gained maximum benefits of the training in this section?**
   - ☐ Yes
   - ☐ To some extent
   - ☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____To _____

Date of Evaluation: _____

PARASITOLOGY

Name of Hospital: _____Lab Section: **Parasitology**
Intern Name: _____University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of parasitological examinations during the internship period.

Objectives:

1. To recognize appropriate specimens type, quantity and quality for requested tests.
2. To preserve and process specimens for requested tests.
3. To exhibit knowledge of different types of clinically significant parasites.
4. To identify different diagnostic stages of clinically significant parasites.
5. To perform urine and semen analysis as part of the duties of parasitology laboratory.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A".

Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply specimens acceptance/rejection criteria			
2	Review specimen type, appropriateness of the container and quantity required.			
3	Examine the labeling of the container and request slip for the type of test requested.			
4	Register specimens in laboratory information system or logbook.			
5	Ensure transportation of specimens in appropriate conditions to Parasitology laboratory.			

B. Techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Stool specimen-:**			
1	**Macroscopic examination of stool:** (color, consistency, appearance, adult worms, segments of cestodes, etc.).			
2	**Microscopic examination of stool:** Direct saline and iodine smears.			
3	Sedimentation concentration technique and identification of diagnostic stages.			
4	Flotation concentration technique and identification of diagnostic stages			
5	Trichrome or other staining technique and identification of diagnostic stages			
6	Modified Kinyoun's or other acid fast staining technique and identification of diagnostic stages			
II	**Urine specimen:**			
1	Macroscopic examination of urine specimen			
2	Microscopic examination of urine specimen			
3	Biochemical examination of urine sample (using strips)			
4	Examination of urine sediment for parasites (*S. haematobium*, *T. vaginalis*)			
5	Pregnancy test			
III	**Miscellaneous specimens and other specific tests:**			
1	Occult blood test			
2	Hydatid cyst specimen processing and Examination.			
3	Sputum specimen processing and Examination.			
4	Vaginal specimens for *T. vaginalis*.			
5	Duodenal specimens for parasites. (*Giardia* /*Cryptosporidium*)			
6	Antigen tests			
7	Helminthes egg counting technique.			
8	Semen analysis.			

C. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Use of standard quality control diagnostic stage slides for different parasitic diseases recommended for specific purposes.			
3	Quality control for culture chemicals prepared in the laboratory.			
4	Quality control for instruments (freezers refrigerator, incubators, autoclave, urinanalyzer, microscopes, etc.).			
5	Quality control for different staining methods.			
6	Quality control of sterilized materials.			
7	Quality control of the biological materials.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section: Parasitology**

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) ____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness towards' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____ **To** _____

Date of Evaluation: _____

CLINICAL CHEMISTRY

Name of Hospital: ___Lab Section: **Clinical Chemistry and Hormones**
Intern Name: _____ University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of clinical chemistry during internship period.

Objectives:

1. To learn different techniques in clinical chemistry.
2. To learn special techniques applied in clinical chemistry.
3. To interpret biochemical values for healthy and disease conditions.
4. To identify and practice calibration procedures and quality control for various tests and criteria for calibration acceptance or rejection.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A".

Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Identify specimen acceptance/rejection criteria.			
2	Identify specimen type (e.g., whole blood, serum, plasma, body fluids etc.), container appropriateness, quantity required and pre-analytical preparation of sample.			
3	Check availability of test requested.			
4	Register specimens in the laboratory information system or logbook.			
5	Sorting of specimens according to test turnaround time.			
6	Apply proper storage of specimens for later testing.			
7	Preparation of (SEND-OUT) specimens.			

B. Instruments:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Reading of the procedure instructions.			
2	Understand principles of tests.			
3	Instrument set-up for analysis.			
4	Samples/reagents preparation.			
5	Operation of the instrument.			
6	Interpretation of test results.			
7	Recognize panic values and immediately report these findings to the supervisor			
8	Understand instrument breakdown/trouble-shooting and corrective maintenance.			

C. Important biochemical profiles:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	***Liver function tests (Markers)*:** ALT, AST, ALP, GGT, total bilirubin, direct bilirubin, total protein, albumin, and A/G ratio.			
2	***Renal function tests (Markers)*:** creatinine, urea, BUN, uric acid, creatinine clearance test, 24 hours urine tests.			
3	***Lipid profile*:** total cholesterol, triglycerides, HDL-cholesterol, LDL- cholesterol and calculation of risk factor.			
4	***Cardiac markers*:** creatine kinase, LDH, troponin, myoglobin, CK-MB, ProBNP, BNP.			
5	**Diabetic profile:** Sugar (fasting, PP, random, GTT, HbA1C).			
6	***Bone profile*:** total calcium, and Ca^{++}, phosphorous, total alkaline phosphatase (s-ALP), bone–specific alkaline phosphatase (s-BALP), serum osteocalcin (BGLAP), serum Vit-D, parathyroid hormone, serum type 1 procollagen (C-terminal/N-terminal): C1NP or P1NP, urinary hydroxyproline.			
7	***Pancreatic function*:** alpha-amylase, lipase.			
8	**Electrolytes:** Na^{+}, K^{+}, Cl^{-}, Ca^{++}, Mg^{++}.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
	Important biochemical profiles (continue):			
9	**pH and blood gases analysis:** (pH, PCO_2, PO_2, HCO^{3-}).			
10	**Hormone profile:** fertility, thyroid, suprarenal (adrenal), pancreas (endocrine), parathyroid, pituitary, hypothalamus.			
11	**Tumor markers:** AFP, CA15-3, CA19-9, CA12S, CEA.			
12	**Iron panel:** Fe, IBCT, ferritin, transferrin.			

D. Special clinical chemistry:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Fully automated analyzers:**			
1	Understand following terms: automation, channel, continuous flow, discrete analysis, flag, random access, STAT.			
2	Understand the steps for instrument setup, programming and maintenance.			
3	Preparation of reagents, diluents and standards.			
4	Interpretation of results.			
5	Understand troubleshooting.			
II	**Blood gas analyzer (with electrolytes):**			
1	Understand principles of tests and instrument setup.			
2	Sample preparation and precautions.			
3	Calibration of all parameters.			
4	Interpretation of the results.			
5	Maintenance free electrode.			
6	Understand troubleshooting.			
III	**DELFIA (Dissociation-enhanced lanthanide fluoro-immunoassay):**			
1	Understand instrument setup.			
2	Understand principles of the assay.			
3	Reagents preparations.			
4	Stander curve calculation.			
5	Calculation of the results.			
6	Interpretation of the results.			
7	Analytical performance characteristics.			
8	Understand troubleshooting.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
	Special clinical chemistry (continue):			
IV	**Electrophoresis techniques:**			
1	Understand principle of different types of electrophoresis.			
2	Different procedures of electrophoresis.			
3	Preparation of reagents, buffers and standards.			
4	Preparation of specimen.			
5	Scanning of electropherogram.			
6	Reading and recording of the results.			
7	Interpretation of results (normal and abnormal electrophoresis results).			
V	**Immunoassay: (e.g., tumor markers, cardiac markers, etc.):**			
1	Understand principles of immunoassays.			
2	Procedure of different immunoassays.			
3	Preparation of standards, controls, buffers, diluents, reagents and wash buffers.			
4	Understand the steps for instrument setup and programming.			
5	Reading and recording of the results.			
6	Interpretation of results.			
VI	**Osmometer:**			
1	Uses of the instrument			
2	Theory of freezing point depression for osmolality determination			
3	Types of samples (samples precautions).			
4	Interpretation of the results.			
VII	**Point of care testing (Poc test):**			
1	Arterial blood gases, rapid blood glucose, rapid cardiac markers, urine strip test.			

E. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Understand Westgurad rules.			
3	Apply knowledge where controls needed for certain parameters.			
4	Run daily controls and evaluate for acceptability.			
5	When control results are accepted or rejected.			
6	Troubleshooting when quality control results show discrepancies.			
7	Apply knowledge when calibration is needed.			
8	Know the criteria of accepting or rejecting the calibration.			
9	When re-calibration is needed.			
10	Quality control of instruments.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ Lab Section: Clinical chemistry and hormones

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: ___to ___ (No of weeks) _____

4. Name(s) of the supervisor under whom you were trained:

_____ _____
_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1. _____
2. _____
3. _____

Suggestions: _____

1. _____
2. _____
3. _____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____
_____
_____
_____
_____
_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____
_____
_____
_____
_____
_____

V. Intern Signature: _____

Date of rotation: From: _____ To _____

Date of Evaluation: _____

HEMATOLOGY

Name of Hospital: _____ Lab Section: **Hematology**
Intern Name: _____ University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of standard hematological techniques during the internship period.

Objectives:

1. To perform routine hematological tests (i.e., CBC, differentials, ESR, coagulation profile, etc).
2. To prepare and stain blood films with routine and special stains.
3. To exhibit knowledge of processing bone marrow specimens.
4. To perform or observe special techniques (e.g., Hb electrophoresis, HPLC, detection of malaria in blood film, sickle cell screening, spherocytosis screening etc.).
5. To prepare films from body fluids (CSF, peritoneal fluid etc.) and cell counting.
6. To apply knowledge of flow cytometry operation and sample preparation, if applicable.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A".
Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply specimen acceptance/rejection criteria.			
2	Review specimen type, appropriateness of the quantity required.			
3	Examine the labeling of the tube and request slip for the type of test requested.			
4	Register specimens in laboratory information system or logbook.			

B. CBC bench:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Automated cell counter:**			
1	Start up the instrument.			
2	Regular maintenance procedures			
3	Run daily controls and evaluate for acceptability.			
4	Evaluation of specimen suitability for testing (not clotted sample).			
5	Run patient specimens for routine testing.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
	Automated cell counter (continue):	**Observe**	**Perform**	
6	Correlate and evaluate scatter grams for normal and abnormal values.			
7	Read the print out of the results and identify normal and critical values.			
II	**Microscopic examination of blood film:**			
1	Identification of normal and abnormal RBC morphology.			
2	Identification of different subsets of normal leukocytes.			
3	Perform differential WBC count.			
4	Estimation of platelet count from the film.			
5	Spot identification of leukemic blasts.			

C. Coagulation bench:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	**Perform**	
	Automated coagulometer:			
1	Start up the instrument.			
2	Regular maintenance procedures			
3	Run daily controls and evaluate for acceptability.			
4	Evaluation of specimen suitability for testing (not clotted sample).			
5	Run patient specimens for routine coagulation testing (PT, PTT and INR)			
6	Run fibrinogen/thrombin and D-dimer.			
7	Special coagulation studies as available (e.g. Anti-thrombin III, factor assays, platelet studies).			
8	Identification of normal and critical values.			

D. Staining bench:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	**Perform**	
1	Preparation of proper blood smears with identification of causes of a bad smear.			
2	Preparation of standard stains (Leishman Giemsa, etc).			
3	Staining of peripheral blood smears with standard stains and identification of causes of bad staining.			
4	Preparation of thin and thick smears for examination of malarial parasites.			
5	Preparation and staining of films using supravital stain for reticulocyte examination.			
6	Special stains for peripheral blood.			

E. Manual techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**ESR** (erythrocyte sedimentation rate):			
1	To set up an ESR.			
2	Performing the test with normal and small sample size (e.g. from babies).			
3	Read and report results.			
II	**Osmotic fragility test:**			
1	Preparation of hypotonic saline solutions from the stock solution.			
2	Proper distribution of heparinized blood in each tube.			
3	Performing the test with normal and small sample size (e.g. from babies).			
4	Reading tubes using spectrophotometer.			
5	Interpretation of results under the supervisor's guidance.			
III	**Screening test for sickle cell anemia:**			
1	Preparation of high molarity phosphate buffer.			
2	Performing all the steps of the test.			
3	Reading and interpretation of results.			
IV	**Detection of malarial parasites in blood films:**			
1	Proper identification of different stages of malarial parasites.			
2	Recording and interpretation of results under the supervisor's guidance.			
V	**Body fluids preparation:**			
1	Preparation of the cell for manual counting by hemocytometer.			
2	Preparation of cell sediment without cell destruction.			
3	Preparation and staining of smears from the sediment for morphological examination.			
4	Reading and interpretation of results under supervisor's guidance.			

F. Bone marrow bench:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Proper preparation of bone marrow smears.			
2	Preparation of smear from bone marrow clot.			
3	Special stain for bone marrow smears.			
4	Processing of specimens for flow cytometry and cytogenetic analysis (if applicable).			

G. Other techniques (if applicable):

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Automated HPLC:**			
1	Regular maintenance procedures.			
2	Preparation of hemolysate.			
3	Start up the instrument.			
4	Run daily controls and evaluate for acceptability.			
5	Interpretation of the results from the curve and calculation of the percentage.			
II	**Flow cytometry:**			
1	Regular maintenance procedures.			
2	Sample preparation for surface staining.			
3	Sample preparation for cytoplasmic staining.			
4	Start up the instrument.			
5	Follow laid down instructions.			
6	Run daily calibration beads and evaluate for acceptability.			
7	Sample acquisition.			
8	Cell gating and interpretation of the results.			

H. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Quality control for staining.			
3	Quality control for different manual techniques.			
4	Quality control of instruments.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section: Hematology**

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____(No of weeks) ____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?

- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?

- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?

- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this

section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____To _____

Date of Evaluation: _____

BLOOD BANK

Name of Hospital: _____ Lab Section: **Blood Bank**
Intern Name: _____ University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of standard blood bank techniques during the internship period.

Objectives:

1. To develop technical accuracy and self-confidence by experiencing routine functions of Blood Bank.
2. To recognize and resolve discrepancies for blood grouping.
3. To exhibit knowledge of standard techniques used for ABO and Rh typing, compatibility testing, antibody identification, antigen typing, and preparation of blood components.
4. To acquaint with the procedures of donor selection and issuing of blood and blood products for transfusion.

Tasks: The intern will observe and/or perform the following procedures:

A. **Donor selection:**

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply AABB donor recruitment criteria.			
2	Determination of donor eligibility and recruitment.			
3	Apply donor screening parameters (weight, blood pressure, hemoglobin, haematocrit).			
4	List and define the possible reactions a donor might experience.			
5	Maintain records of donation in accordance with applicable regulations.			

B. Blood donation:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Assess and label blood bag according to AABB standards.			
2	Prepare the arm for phlebotomy.			
3	Identify and prepare venipuncture site.			
4	Ensure care of a donor during donation.			
5	Provide post donation guidelines.			
6	Recognize donor reactions and consult physician for possible management.			
7	Apheresis procedures (if available)			

C. Blood components Preparation:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Preparation of blood unit components including packed red cells, platelets, washed RBCs, cryoprecipitate and FFP.			
2	Storage of blood and blood components at appropriate temperature according to AABB standards.			
3	Follow quality control measures according to AABB standards.			
4	Know the therapeutic advantages of blood and blood components.			
5	Discarding of expired blood and infectious blood units according to AABB standards.			

D. Pre-transfusion testing:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Criteria for acceptance/rejection of samples.			
2	Available test in the unit and proper tube for each one.			
3	Specimen separation, storage, retention and discard policy.			
4	Criteria for acceptance/rejection of blood transfusion request form.			
5	ABO (forward and reverse) grouping, Rh typing (including D/D^u) and DAT.			
6	Resolve any discrepancies in forward and reverse ABO grouping using appropriate methods in practice.			
7	Recognize and apply appropriate antibody screening tests.			
8	Single/multiple antibody identification tests if antibody screening is positive.			
9	**Providing suitable blood for transfusion:** Patient identification, record review, pre-transfusion testing of the patient's blood, and testing of donor unit for ABO and Rh compatibility.			
10	Cross matching using gel method, and manual and automated tube methods, if available.			
11	Cross matching in routine and emergency situations.			
12	Results interpretation			
13	Reporting results			
14	Critical result reporting policy			

E. Pre-transfusion testing (Cont.):

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
15	Policies of issuing blood and blood components.			
16	Policies of receiving returned blood and blood components.			

F. Special advance techniques:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Antibody titration and interpretation of its results.			
2	Antibody elution and other special techniques.			
3	Identify special advance techniques need to be performed with normal reference range for each technique.			
4	Cold agglutination and phenotyping			

G. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Quality control for biological kits and reagents.			
3	Quality control for different techniques.			
4	Quality control for blood components preparation.			
5	Quality control for instruments.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year:_____ **Lab Section: Blood Bank**

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to ___ (No of weeks) _____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?

- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?

- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?

- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.

☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____ **To** _____

Date of Evaluation: _____

SEROLOGY AND IMMUNOLOGY

Name of Hospital: _____ Lab Section: **Serology and immunology**

Intern Name: _____ University ID: _____

Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills in serology and immunology for the diagnosis of various diseases.

Objectives:

1. To acquire knowledge in routine serological and immunological techniques.
2. To use different techniques and equipments available for performing routine tests.
3. To exhibit knowledge and importance of blood donors testing, if applicable.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A". Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply specimen acceptance/rejection criteria.			
2	Review specimen type, appropriateness of the quantity required.			
3	Examine the labeling of the tube and request slip for the type of test requested.			
4	Register specimens in laboratory information system or logbook.			
5	Preparation of SEND OUT specimens, if applicable.			
6	Specimen validation and release			

B. Techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Agglutination technique:**			
1	Serial dilution of the test sample.			
2	Reagents preparation.			
3	Follow the standard procedures correctly.			
4	Identification of negative and positive samples.			
5	Calculation of titer for diluted sample.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
II	**ELISA:**			
1	Reagent preparation.			
2	Dilution of the sample whenever needed.			
3	Follow the laid down instructions.			
4	Follow proper incubation time and temperature.			
5	Calculate the concentration from the standard curve for diluted specimens.			
III	**Immunoblot technique: Western blot, RIBA (if applicable)**			
1	Follow the procedures correctly.			
2	Comparison of the test strip result with the control strips.			
3	Identification of negative and positive results.			
IV	**Immuno-fluorescence technique:**			
1	Dilution of the test specimen.			
2	Reagents preparation.			
3	Follow the procedures correctly.			
4	Visualize the slides under fluorescent microscope under supervision.			
5	Calculation of the titer.			
V	**Other tests: (if applicable)**			
1	TPHA (*Treponema pallidum* haem- agglutination assay), (IHA).			
2	RPR (rapid plasma reagin).			
3	CRP (C-reactive protein).			
4	Widal.			
5	Brucella.			
6	ASO (Antistreptolysin titer).			
VI	**Blood donor testing (if available):**			
1	The 6 major tests included in the panel (HIV, HBV, HCV, HTLV, RPR, HBc, Total Ab)			
2	Follow standard methodology for these tests.			
3	Interpretation of these tests results.			
VII	**Nephelometry: (if applicable)**			
1	Starting up the instrument.			
2	Regular maintenance procedures.			
3	Running of controls daily and evaluate its acceptability.			
4	Evaluation of specimen's suitability for testing.			
5	Specimen preparation for testing.			
6	Routine testing of patient specimens.			
7	Reading results printout and identify normal and critical values.			

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
VIII	**Chemiluminescence:**			
1	Starting up the instrument.			
2	Regular maintenance procedures			
3	Run controls daily and evaluate its acceptability.			
4	Evaluation of specimen's suitability for testing.			
5	Specimen preparation for testing.			
6	Routine testing of patient specimens.			
7	Reading results printout and identify normal and critical values.			
IX	**Fluoro-enzyme immunoassay: Immuno CAP 100**			
1	Regular maintenance procedures.			
2	Panel for different types of allergy.			
3	Start up the instrument.			
4	Specimen/reagent preparation.			
5	Testing of patient specimens.			
6	Reading results' printout and identify positive and negative values.			

C. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Quality control for ELISA technique.			
3	Quality control for different agglutination techniques.			
4	Quality control for immunoblotting assay.			
5	Quality control for nephelometry.			
6	Quality control for chemiluminescence.			
7	Quality control fluoro-enzyme immuno-assay.			
8	Quality control for instruments (freezers refrigerator, incubators etc.).			
9	Quality control of the biological materials.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ Lab Section: Serology and immunology

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) ___
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. **Do you feel that you gained maximum benefits of the training in this section?**
   - ☐ Yes
   - ☐ To some extent
   - ☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____ **To** _____

Date of Evaluation: _____

HISTO AND CYTOPATHOLOGY

Name of Hospital: _____Lab Section: **Histo and cytopathology**

Intern Name: _____ University ID: _____

Rotation Period (from/to): _____

Goal: Interns need to acquire practical skills of histo-and cyto-pathological procedures during the internship.

Objectives:

1. To recognize appropriateness of specimen type, size, and quality.
2. To preserve and handle specimens for the requested tests.
3. To exhibit knowledge of different stains and staining protocols including immuno-histo/cyto-chemical staining.

Tasks: The intern will observe and/or perform the following procedures. If any task is not available, please mark "NA".

Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Understand specimens' collection guidelines.			
2	Apply specimens' acceptance/rejection criteria.			
3	Review specimen type, size and appropriateness of the preservative and container for histopathology.			
4	Review specimen type, size and appropriateness of the preservative and container for cytopathology.			
5	Examine the labeling of the container and request slip for the type of test requested.			
6	Register specimens in laboratory information system or logbook.			
7	Ensure handling and preservation of specimens in histopathology laboratory.			
8	Ensure handling and preservation of specimens in cytopathology laboratory.			
9	Receiving and filing of paraffin blocks, slides' request and reports.			

B. Techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
I	**Specimens handling and preparation:**			
1	Specimens handling protocols.			
2	Grossing protocols.			
3	Storage and disposal protocols for biological specimens and other materials.			
4	Decalcification protocols.			
5	Processing protocols.			
6	Embedding protocols.			
7	Preparation of smears for cytopathology.			
8	Preparation of cell blocks for cytopathology			
9	Use of automated systems for special procedures.			
II	**Microtomy:**			
1	Specimen's microtomy and related protocols.			
2	Understands and applies standard specimen's processing protocols			
III	**Chemical staining:**			
1	Routine staining protocols (e.g., Haemotoxylin and Eosin staining).			
2	Special histochemical staining protocols (e.g., tumor markers).			
3	Routine staining for cytopathology (pap smear).			
4	Application of coverslip.			
IV	**Immuno-staining:**			
1	Antigen retrieval protocols.			
2	Immuno-histochemistry techniques.			
3	Immuno-fluorescence techniques.			
V	**Advance techniques: (if available)**			
1	*In situe* hybridization and its processing protocols.			
2	Electron microscopy.			

C. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures.			
2	Quality control for different staining methods.			
3	Quality control for reagents/materials prepared in the laboratory.			
4	Quality control for instruments (microscopes, microtomes, freezers, refrigerators, incubators, autoclave, etc.)			
5	Quality control of biological materials.			
6	Quality control of instruments.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section: Histo and cytopathology**

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) ___
4. Name(s) of the supervisor under whom you were trained:

_____ _____
_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. **Do you feel that you gained maximum benefits of the training in this section?**
   - ☐ Yes
   - ☐ To some extent
   - ☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____To _____

Date of Evaluation: _____

MOLECULAR DIAGNOSTICS

Name of Hospital: _____Lab Section: **Molecular diagnostics**
Intern Name: _____University ID: _____
Rotation Period (from/to): _____

Goal: Interns need to acquire standard practical skills in molecular diagnostics.

Objectives:

1. To identify types of specimens received for molecular diagnosis.
2. To understand the importance of contamination hazard in molecular diagnosis.
3. To perform the required tests in an appropriate way.
4. To know the significance of accuracy in molecular testing procedures.
5. To understand the appropriate interpretation of molecular results.

Tasks: The intern will observe and/or perform the following procedures. If any task is not applicable, please mark "N/A". Each task to be signed by the trainer during training of the trainee:

A. Specimens reception:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Apply specimen's acceptance/rejection criteria.			
2	Know the requirements to notify appropriate personnel about order or specimen problem.			
3	Use required documentation for order or specimen problems.			
4	Know the specimen separation, storage, retention and discard procedure.			
5	Preparation of (SEND-OUT) specimens.			

B. Techniques and procedures:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Orientation about preventive measures in molecular laboratory.			
2	Extraction of nucleic acid from different specimens using appropriate methods (manual and automated).			
	Tasks	**Trainee (Tick appropriate column)**		**Trainer's signature**
		Observe	**Perform**	
3	Quantification of extracted nucleic acid (DNA/RNA).			
4	Setting up PCR.			
5	Setting up of instruments (e.g., thermocycler).			
6	Detection of suspected amplicons using appropriate methods.			
7	Interpretation of obtained results.			

C. Quality control:

	Tasks	Trainee (Tick appropriate column)		Trainer's signature
		Observe	Perform	
1	Participate in quality control procedures to prevent contamination.			
2	Quality control of solutions, reagents and other materials.			
3	Quality control for different techniques.			
4	Quality control of instruments.			

Laboratory Training Coordinator:

Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
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Laboratory Medicine Internship

Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ Lab Section: Molecular diagnostics

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) ____
4. Name(s) of the supervisor under whom you were trained:

_____ _____
_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?
- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?
- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?
- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. **Do you feel that you gained maximum benefits of the training in this section?**
   - ☐ Yes
   - ☐ To some extent
   - ☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____ **To** _____

Date of Evaluation: _____

FORMS

UMM AL QURA UNIVERSITY
Faculty of Applied Medical Sciences
Department of Laboratory Medicine
Laboratory Medicine Internship

Instructions to Evaluator: The columns indicate numerical grades (<60 to 100). Please indicate, by assigning a **numerical grade within one column**, the level of competence at which the intern performed in each category while on rotation in your laboratory. If you feel a category is not applicable to your clinical situation, please mark "N/A".

Form #1

EVALUATION OF INTERN BY CLINICAL LABORATORY
(Supervisor form- Confidential)

Name of Hospital: _____Lab Section: _____
Intern Name: _____University ID: _____
Rotation Period (from/to): _____

FINAL ASSESSMENT:

(AVERAGE SUM OF SECTIONS I + II/2) = _____%

☐ **below average** ☐ **average** ☐ **good** ☐ **very good** ☐ **excellent**

OVERALL PERFORMANCE:

☐ **Satisfactory (≥ 60)** ☐ **Unsatisfactory (<60)**

If unsatisfactory, what recommendations would you like to make?

☐ Repeat the training for whole rotation period

☐ Repeat _____ tasks for _____weeks

Evaluator's Name: _____

Signature: _____

Date: _____

EVALUATION OF INTERN BY CLINICAL LABORATORY

I- II- **General Clinical Competences**	**Excellent**	**Very Good**	**Good**	**Average**	**Below average**
The student was able to:	**90-100**	**81-90**	**71-80**	**60-70**	**<60**
1. Follow hospital regulations and codes.					
2. Punctuality and initiative for work.					
3. Adhere to safety rules.					
4. Exhibit verbal communication skills.					
5. Work as a team member.					
TOTAL (of each column)					
GRAND TOTAL= SUM OF ALL COLUMNS					
AVERAGE OF SECTION I (Grand total/5)					
II-Discipline Competencies					
1. Understand the principles of various tests.					
2. Pre-analytical skills.					
3. Analytical skills.					
4. Post-analytical skills.					
5. Apply specimen acceptance/rejection criteria.					
6. Log the specimens appropriately.					
7. Record and report appropriate results to supervisor.					
8. Comply with quality control measures.					
9. Operate automated systems/ instruments for analysis.					
10. Meet the goal set by the unit.					
TOTAL (of each column)					
GRAND TOTAL= SUM OF ALL COLUMNS					
AVERAGE OF SECTION II (Grand total/10)					
AVERAGE SUM OF SECTIONS I + II/2					
FINAL %					

(Supervisor form- Confidential)

Evaluator's Name: _____

Signature: _____

Date: _____

UMM AL QURA UNIVERSITY
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Laboratory Medicine Internship

Form #2

SUMMARY OF INTERNSHIP EVALUATION
(Confidential)

Intern Name: _____

Intern University ID: _____

Name of the Hospital: _____

S. No.	Clinical Discipline	Final Assessment	
		Percentage (%)	Grade
1	Main specimen reception		
2	Phlebotomy		
3	Microbiology		
4	Parasitology		
5	Biochemistry		
6	Haematology		
7	Blood Bank		
8	Serology and immunology		
9	Histo and cyto-pathology		
10	Molecular diagnostics		
11	Major specialty		
12	Scientific activities (hospital seminars, conferences, workshops, etc.)		
	Total percentage (%)= sum of all %/12		
	Final grade		

Remarks (if any):

_____

_____

Name of Laboratory Training Coordinator: _____

Signature of Laboratory Training Coordinator: _____ **Date:** _____

UMM AL QURA UNIVERSITY
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Department of Laboratory Medicine
Laboratory Medicine Internship

EVALUATION OF INTERN BY PROGRAM

Form #3

INTERNSHIP COMMITTEE (Confidential)

Each intern is also evaluated by the faculty internship committee for his/her professional development and continued medical education on the basis of his/her participation or attendance in faculty/university scientific conferences, seminars and workshops.

This section represents 20% of the total internship evaluation. Each intern **MUST** fill this form and submit to **Program internship coordinator** along with certificates of attendance and participation at the end of internship period for the review of internship committee.

NO	TITLE OF EVENT	VENUE	DATE	Marks Obtained
I	ATTENDANCE/PRESENTATION IN FACULTY/UNIVERSITY CONFERENCE: (10 MARKS)			
1				
2				
3				
4				
5				
II	COMMITMENT TO FILL TASKS FORMS IN INTERNSHIP BOOKLET (5 MARKS)			
III	COMMITMENT TO FILL INTERN FEEDBACK FORM (FORM #4) (5 MARKS)			
			TOTAL MARKS (20)	

Members of Program Internship Committee:

1. **Name:** _____ **Signature:** _____ **Date:** _____
2. **Name:** _____ **Signature:** _____ **Date:** _____
3. **Name:** _____ **Signature:** _____ **Date:** _____
4. **Name:** _____ **Signature:** _____ **Date:** _____

UMM AL QURA UNIVERSITY
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Form #4

INTERN FEEDBACK OF INTERNSHIP
(Intern form)

Year: _____ **Lab Section:** _____

1. Intern Name: _____
2. Hospital Name: _____
3. Rotation Period: Dates: From: _____to _____ (No of weeks) ____
4. Name(s) of the supervisor under whom you were trained:

_____ _____

_____ _____

I. Overview: Check **(√)** explanation that most closely represents your evaluation of this section.

1. Were intern's responsibilities and privileges discussed with you?

- ☐ Clearly discussed
- ☐ Clear to some extent
- ☐ Not clear

2. What is your opinion about training for interns in this section?

- ☐ Excellent training
- ☐ Good training
- ☐ Adequately planned training
- ☐ Poorly planned training

3. Do you feel that the responsibilities given to you in this section were according to your abilities to handle them?

- ☐ The responsibilities given to me were suited to my ability to handle them.
- ☐ Some of the responsibilities were above my ability to handle them.
- ☐ The responsibilities given to me were too limited and too narrow.

4. Do you feel that you gained maximum benefits of the training in this section?

☐ Yes
☐ To some extent
☐ No benefit

II. Supervision and Instruction: Please rate the section on each item below by **circling** the appropriate number on the rating scale. The rating scale is:

0=Not applicable **1**=Poor **2**=Adequate **3**=Above average **4**=Excellent

		Rating Scale				
A	Committed to the training program	0	1	2	3	4
B	Supervision of intern	0	1	2	3	4
C	Encouraging intern learning	0	1	2	3	4
D	Amount of feedback given to intern	0	1	2	3	4
E	Friendliness toward interns' questions	0	1	2	3	4

III. Clinical Laboratory Experience:

1. List below the instruments/equipments you operated.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

2. List the types of tests you observed but did not perform.

1._____ 2._____
3._____ 4._____
5._____ 6._____
7._____ 8._____
9._____ 10._____

3. What additions/deletions or suggestions would you like to make for the training in this section? Please explain.

Additions:_____
1._____
2._____
3._____

Deletions:_____

1._____

2._____

3._____

Suggestions:_____

1._____

2._____

3._____

IV. Academic/Clinical Correlation:

1. Did you find correlation between previously learned theories/concepts (at university) and their practical application during training in this section? If your answer is "no", please explain.

☐ yes ☐ no

_____

_____

_____

_____

_____

_____

2. What recommendations would you like to make to correlate your learning theories/concepts (at university) with the practical experience during training in this section?

_____

_____

_____

_____

_____

_____

V. Intern Signature: _____

Date of rotation: From: _____ **To** _____

Date of Evaluation: _____

UMM AL QURA UNIVERSITY
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Form #5

INTERNSHIP MONITORING REPORT

Year: _____
1st Visit ☐ 2nd Visit ☐ 3rd Visit ☐

A: FEEDBACK FROM HOSPITAL TRAINING COORDINATOR:

Name of the Hospital: _____

Name of the Hospital Training Coordinator: _____

Intern Performance	Excellent	Very Good	Good	Average	Below average
	90-100	81-90	71-80	60-70	<60
1. Follow hospital rules and regulations.					
2. Punctuality and initiative for work.					
3. Adhere to safety codes.					
4. Exhibit verbal communication skills.					
5. Work as a team member.					
Problems with interns, if any.					

B: FEEDBACK FROM INTERSHIP STUDENTS:

Intern Experience	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	5	4	3	2	1
1. The internship is giving me a better understanding of concepts and skills.					
2. I am given level of responsibilities which is consistent with my abilities.					
3. My supervisor is available and accessible when I have questions.					
4. I have regular meeting with my supervisor and receive constructive feedback.					
5. Are you all using UQU internship booklet.	**Yes**		**No**		
6. **If yes**, does this booklet provide you useful guidance for internship?					
7. **If not**, please state the difficulties.					
8. Any Suggestions:					

C: PROBLEMS WITH STUDENTS, IF ANY:

Names of the members of monitoring team and signature:

Name: _____ Signature: _____

Name: _____ Signature: _____

Name: _____ Signature: _____

Name: _____ Signature: _____

Date: _____

HOSPITAL COORDINATOR'S FEEDBACK ON UQU INTERNSHIP BOOKLET

Name of the Hospital					
Hospital Coordinator's impression on UQU internship booklet	**Strongly agree**	**Agree**	**Neutral**	**Disagree**	**Strongly disagree**
	5	4	3	2	1
1. Is this hospital using UQU internship booklet for UQU students?			**Yes**	**No**	
If yes, 1.1. This booklet provides useful guidance to internship students.					
1.2. It is helping laboratory supervisors to be aware of the tasks to be meet by the students in each discipline.					
1.3. Student are using UQU internship booklet.					
1.4. Students experience any difficulty in following internship booklet.					
2. If hospital is **not** using UQU internship booklet, please state the difficulties.					

Name of the Hospital Training Coordinator: _____

Signature: _____ Date_____

Members Name: _____

Members Signatures: _____

CONTACTS

1. **INTERNSHIP COORDINATOR:**

Dr. Nasir Elsawy
naser_elsawy@ymail.com
Tel: 5270000 Ext 4252
Mobile: 0540889314

2. **INTERNSHIP SECRETARIES:**

a) For Male Students:

Mr. Ashraf Bogus
E-mail: ash_bugis@hotmail.com, ashraf.bugis@gmail.com
Mobile: 0544666882

b) For Female Students:

Ms. Samah Sadaqa
Tel: 5270000 Ext 4249

In case of no response from above persons please contact:

VICE DEAN ASSISTANT FOR HOSPITAL AFFAIRS:
Prof. Muhammad Mubashir Ahmad Khan
E-mail: mubashirpmrc@yahoo.com, makhan@uqu.edu.sa
Tel: 012-5270000 Ext 4239
Mobile: 0509010825

OR

VICE DEAN FOR HOSPITAL AFFAIRS:
Dr. Maher Al-Andiyjany
E-mail: mnandiyjany@uqu.edu.sa, vd_amdh@uqu.edu.sa,
Mobile: 0504542360

تصميم واخراج

جامعة أم القرى
مطبعة