Republic of Yemen
Ministry of Higher Education & Scientific Research
21 September University for Medical & Applied Sciences
Faculty of Laboratory Medicine

الجمهورية اليمنية
وزارة التعليم العالي والبحث العلمي
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية
كلية الطب المخبري

Laboratory students practical Logbook

لجنة الاعداد:

عمادة ومعيدي كلية الطب المخبري

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Student information

Student name:……

University name :-……

University ID:-……

Mobile number:-……..

Address:- ……..

Internship specifics

Introduction:

Internship is an integral part of the program in laboratory medicine and is designed to provide students 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, students learn more about diagnostic test procedures, quality control methods and programs, and instrumentation in the clinical laboratory. They also again a understanding of the roles and functions of the medical laboratory professionals.

The internship provides applied learning experiences during which the students should be :

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**.**

Internship eligibility criteria:

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

Internship duration:

The training period for the internship is 164 working days' training (6 months). It is offered in 5 academic year of the program and begins after the final examination of 4 academic year and student must be pass in the all examinations of 4 academic year.

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.

General laboratory safety procedures

General laboratory safety:

1- Always wear laboratory coat while working. After work, leave the lab coat in anassigned cabinet or ears.

2- Must wear personal protective equipment (gown, gloves, masks, face shield or glasses) 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 worm 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 before handling telephones, computer keyboard, 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.).

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 ordroplets.

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.

Internship guidelines for laboratory disciplines

Proposed training schedule

No	Laboratory discipline	Duration
1	Main specimen reception	6 working days (one week)
2	Phlebotomy	12 working days (2 weeks)
3	Microbiology	26 working days (one month)
4	Parasitology	26 working days (one month)
5	Clinical chemistry	26 working days (one month)
6	Hematology	26 working days (one month)
7	Blood Banking & Transfusion	18 working days (3 weeks)
8	Serology and immunology	12 working days (2 weeks)
9	Histopathology	12 working days (2 weeks)
	Total	**164 working days' training (6 months)**

Main specimen reception

Name of hospital/ Lab.:-_____ **Section**:-_____

Intern name:-_____**University ID**:-_____

Rotation period:-_____

Goal :-to acquired 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 specimen entry and distribution to respective laboratories.

A- Documentation:

No	Tasks	Trainee (tick appropriate column)		Trainers 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:

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Follow specimen receiving procedures			
2	Categorize specimens according to their turnaround 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 :-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Orientation of LIS for specimen entry.			
2	Follow the test order status.			
3	Learn to generates daily data of specimens received at reception.			

Phlebotomy

Name of hospital :-_____**section**:-_____

Intern name :-_____**university ID**:-_____

Rotation period :-_____

Goal:- 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 detect the preferred venous access sites.

3-To know how to apply a tourniquet and for desirable time.

4-To insert the needle properly for blood withdrawal.

5-To take care of the patient to avoid complication during and after blood collection process.

A-Preparation for blood specimen collection:

No	tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	perform	
1	Ensure that 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 consideration to be followed for each of the various color coded tubes.			
5	Register the specimens in the laboratory information system.			

B-Technique for blood specimen collection:-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Ensure that the patient is well prepared prior blood collection.			
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	Special precautions for blood withdrawal and inoculation into appropriate culture media for microbiological investigations.			
5	Disinfection of blood collection site and proper insertion of the needle for blood withdrawal .			
6	Post withdrawal procedures for specimen (transport, preservation and storage)			
7	Post withdrawal observation and care of the patient.			

Biochemistry

Name of hospital :-_____**section:-**_____

Intern name :-_____**university ID**:-_____

Rotation period :-_____

Goal :-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 identify and practice calibration procedures and quality control for various tests.

4-To interpret biochemical values for healthy and disease conditions.

A-Specimens reception:"

No	tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	perform	
1	Identify specimen acceptance/rejection criteria.			
2	Identify specimen type(whole blood, serum, plasma, body fluids) container appropriateness, quantity required and pre –analytical preparation of sample.			
3	Check availability of test requested.			
4	Register specimens in the laboratory information system orlog book.			
5	Sorting of specimens according to test turnaround time.			
6	Apply proper storage of specimens for later testing.			

B- Instruments:

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Understand instrument setup.			
2	Reading of the procedure instructions.			
3	Understand principle of tests.			
4	Instrument set-up for analysis.			
5	Samples and reagents preparation.			
6	Operation of the instrument.			
7	Understand instrument break down/trouble-shooting and correctivemaintenance .			

C-Testes

N o	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
	Diabetic profile			
1	FBS			
2	RBS			
3	PPBS			
4	GTT			
5	HbA1C			

Liver function test (LFT)

N o	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	ALT			
2	AST			
3	Total bilirubin			
4	Direct bilirubin			
5	ALP			
6	GGT			
7	Total protein			
8	albumin			

Kidney function test (KFT)

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Creatinine			
2	urea			
3	Uric acid			
4	Creatinine clearance test			

Lipid profile

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Total cholesterol			
2	Triglycerides			
3	HDL-cholesterol			
4	LDL-cholesterol			

Cardiac markers

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Creatine kinase CK			
2	CK-MB			
3	troponin			
4	myoglobin			
5	LDL			

Pancreatic function

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Alpha-amylase			
2	lipase			

Bone profile

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Total calcium			
2	ALP			
3	Vit-D			

Electrolytes

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
	Electrolytes			
1	K+			
2	NA+			
3	CL-			
4	CA++			
5	MG++			

pH and blood gases analysis :

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	PH			
2	PCO2			
3	PO2			
4	HCO3-			

Hormones :-

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	TSH			
2	T3			
3	T4			
4	Growth hormone			
5	Cortisone			
6	Adrenalin			
7	Aldosterone			
8	LH			
9	FSH			
10	HCG			
11	Prolactin			
	Others tests			

Tumor markers:-

N o	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	AFP			
2	CA15-3			
3	CA19-9			
4	CA125			
5	CEA			
6	PSA			
7	**Others test**			

E-Quality control:

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Participate in quality control procedures.			
2	Apply knowledge where controls needed for certain parameters.			
3	Run daily controls and evaluate for acceptability.			
4	When control results are accepted or rejected.			
5	Apply knowledge when calibration is needed.			
6	Quality control of instruments.			

Hematology

Name of hospital :-_____section:-_____
Student name :-_____university ID:-_____

Rotation period :-_____

Goal :- To acquire practical skills of standard hematological techniques during the internship period.

Objectives:-

1-To perform routine hematological tests.

2-To prepare and stain blood films with routine and special stain .

3-To exhibit knowledge of processing bone marrow specimens.

4-To perform or observe special techniques.

A-Specimen reception:-

No	tasks	Trainee (tick appropriate column)		Trainers 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 requests slip for the type oftest requested.			
4	Register specimens in laboratory information systemor logbook.			

B- CBC bench :-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	perform	
I	**Manual cell count**			
1	Perform Hb measurement.			
2	Perform WBC count.			
3	Perform RBC count .			
4	Perform platelets count.			
5	Perform PCV.			
6	Calculation MCV.			
7	Calculation MCH.			
8	Calculation MCHC.			
II	**Automated cell counter**			
1	Start up the instrument.			
2	Regular maintenance procedures.			
3	Run daily controls and evaluate for acceptability.			
4	Evaluation of specimens for routine testing.			
5	Correlate and evaluate scatter grams for normal and abnormal values.			
6	Read the print out of the results and identify normal and critical values.			
III	**Microscopic examination of blood film:**			
1	Identify of normal and abnormal RBC morphology.			
2	Identify of different subsets of normal leukocytes.			
3	Perform differential WBC count.			
4	Estimation of platelate count from the film.			
5	Identification of leukemic blasts.			

Staining bench:-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Preparation of proper blood smears with identification of causes of bad smear.			
2	Preparation of standard stains(Leishman, Giemsa, ect)			
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.			

Manual techniques and procedures:-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
II	**ESR (erythrocyte sedimentation rate):-**			
1	To set up an ESR			
2	Performing the test with normal and small sample size.			
3	Read and report result.			
II	**Osmotic fragility test:-**			
1	Preparation of hypotonic saline solutions			
2	Proper distribution of heparinized blood in each tube.			
3	Reading tubes using spectrophotometer.			
4	Interpretation of results.			

III	**Screening test for sickle cell anemia:**			
1	Preparation of high molarity phosphate buffer.			
2	Performing all the steps of test.			
3	Reading and interpretation of result.			
IV	**Detection of malarial parasites in blood**			

Film:				
1	Proper identification of different stages of malarial parasites.			
2	Recording and interpretation of results .			

-Quality control:

No	**tasks**	**Trainee (tick appropriate column)**		**Trainers 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.			

Blood bank

Hospital :-_____section:-_____
Student name :-_____university ID:-_____

Rotation period :-_____

Goal:- to acquire practical skills of standard blood bank techniques during the intership 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.

A-Donor selection:

No	Tasks	Trainee (tick appropriate column)		Trainers 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 regulation.			

B-Blood donation:

N0	Tasks	Trainee (tick appropriate column)		Trainers 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.			

C-Blood components preparation :

No	Tasks	Trainee (tick appropriate column)		Trainers 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 .			
3	Follow quality control measures .			
4	Know the therapeutic advantages of blood and blood components.			
5	Discarding of expired blood and infectious blood units .			

D-Pre-transfusion testing:

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	Perform	
1	Criteria for acceptance/rejection of sample.			
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.			
6	Resolve any discrepancies in forward and reverse ABO grouping using appropriate methods in practice.			
7	Recognize and apply appropriate antibody screening tests.			
8	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.			
9	Cross matching in routine and emergency situations.			
10	Results interpretation.			
11	Reporting results.			
12	Critical result reporting policy.			

E-Special advance techniques:

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	Perform	
1	Antibody titration and interpretation of its results.			

F-Quality control:

No	Tasks	Trainee (tick appropriate column)		Trainers 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			
5	Quality control for instruments.			

Microbiology

Hospital :-_____section:-_____
Student name :-_____university ID:-_____

Rotation period :-_____

Goal:- 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 time.

A-Specimens reception:

No	Tasks	Trainee (tick appropriate column)		Trainers 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 send out specimen.			

B-Media preparation:-

No	Tasks	Trainee (tick appropriate column)		Trainers 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, Sabourauds dextrose agar.			

C-Techniques and procedures:-

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
I	**Specimen inoculation and incubation**			
1	Specimen inoculation on appropriate laboratory media using standard streaking technique.			
2	Incubation of inoculate plates at appropriate temperature and atmospheric condition.			
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 slid to determine Gram reaction (G+ve or G-ve) and cell morphology and arrangement.			
1	**Special colony characteristic:** 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 test:-			
1	Catalase test			
2	Coagulase tube test			
3	Oxidase test			
4	Optochin disk			
5	Novobiocin			
6	Bacitracin disk			
7	X and V factor disks			

D-Special tasks for different benches:-

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
I	**Urine bench:**			
1	Application of semi-quantitative colony counting techniques for significant bacteria.			
2	Calculation of number of organism in a sample for significant bacteriuria.			
II	**Blood and other sterile body fluid :**			
a	Blood:			
1	Placing blood culture bottles into available blood culture system.			
2	Processing of positive blood cultures on appropriate culture media pathogenic organism using appropriate procedures.			
B	**Cerebrospinal fluid(CSF):**			
1	Gram staining of centrifuged CSF specimen for the type of organism.			
2	Reporting of results of above test to laboratory supervisor for confirmation and reporting.			
C	**Other body fluids:**			
1	Apply standard staining procedure .			
2	Processing of specimens on appropriate culture media for isolation and identification of pathogenic organism.			
III	**General microbiology bench(swabs):**			

1	Inspection of request form for the type of			
	specimen (pus, wound, throat, ear, eye, nasal, vaginal swab ect.) and type 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.			
5	Identification of suspected pathogen using available identification system.			
IV	**Respiratory bench(sputum);**			
1	Inspection of request form for the type of specimen 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.			
1	**Mycobacteriology bench:**			
2	Use of required personal protective equipment.			
3	Preparation of specimens by decontamination concentration method.			
4	Ziehl-Neelsen stained slide for the presence of acid fast bacilli.			
5	Inoculation of specimen on appropriate culture media (Lowenstein Jensen)and observing growth.			
6	Anti mycobacterial sensitivity testing.			

VII	**Mycology bench:**			
1	Recognition of colony characteristics for yeast on culture media.			
2	Gram staining for yeast.			
3	Confirmation of Candida albicans by germ tube test.			
4	Conformation 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.			
VIII	**Molecular diagnostics**			
1	DNA extraction			
2	RNA extraction			
3	RT-PCR			
4	Conventional PCR			
5	Real time PCR			
6	Fluorescent in situ hybridization			
7	Hybridization			
8	Gel Electrophoresis			

E-Quality control:-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
1	Participate in quality control procedures.			
2	Quality control for culture media prepared in the laboratory .			
3	Quality control for instruments (freezers refrigerator , incubators, autoclave).			
4	Quality control for growth of organisms on culture media .			
5	Quality control of sterilization procedure for freshly prepared laboratory media and decontamination of hazardous materials.			
6	Quality control of staining reagents.			
7	Quality control of other reagents used in microbiology.			

Serology and immunology

Hospital :-_____**section:-**_____
Student name :-_____**university ID**:-_____

Rotation period :-_____

Goal:- 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 exhibite knowledge and importance of blood donors testing, if applicable.

A-Specimens reception:

No	tasks	Trainee (tick appropriate column)		Trainers 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-Techniques and procedures :-

No	tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
I	**Agglutination technique:**			
1	Serial dilution of the test sample.			
2	Reagent preparation.			
3	Follow the standard procedures correctly.			
4	Identification of negative and positive samples.			
5	Calculation of titer for diluted sample.			

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	perform	
II	**ELIZA**			
1	Reagent preparation.			
2	Dilution of the sample whenever needed.			
3	Follow the laid down instruction.			
4	Follow proper incubation time and temperature.			
5	Calculate the concentration from the standard curve for diluted specimens.			
III	**Immunoblot technique :western blot,**			
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 .			
5	Calculation of the titer.			
V	**Other tests:**			
1	TPHA			
2	RPR			
3	CRP			
4	Widal			
5	Brucella			
6	ASO			

No	**tasks**	**Trainee (tick appropriate column)**		**Trainers signature**
		Observe	**perform**	
VI	**Blood donor testing**			
1	HIV, HBV, HCV, RPR,HTLV			
2	Follow standard methodology for these tests.			
3	Interpretation of these results.			
4	**Fluoro-enzyme immunoassay**			
5	Regular maintenance procedures.			
6	Panel for different types of allergy.			
7	Start up the instrument.			
8	Specimen/ reagent preparation.			
9	Testing of patient specimens .			
10	Reading results printout and identify positive and negative values.			

C-Quality control:

No	tasks	Trainee (tick appropriate column)		Trainers 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 fluoro-enzyme immunoassay.			
6	Quality control for instruments.			
7	Quality control of the biological materials.			

Parasitology

Hospital :-_____**section:-**_____
Student name :-_____**university ID**:-_____

Rotation period :-_____

Goal:- 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.

A-Specimens reception:

NO	Tasks	Trainee (tick appropriate column)		Trainers signatures
		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

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		observe	perform	
I	**Stool specimens:**			
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 ofdiagnostic stages.			
II	**Urine specimen:**			
1	Macroscopic examination of urine specimen			
2	Microscopic examination of urine sample.			
3	Biochemical examination of urine sample.			
4	Examination of urine sediment for parasites.			
5	Pregnancy test.			
III	**Other test:**			
1	Occult blood test.			
2	Hydatid cyst specimen processing and examination.			
3	Vaginal specimen for T.vaginalis.			
4	Antigen test.			
5	Helminthes egg counting technique.			
6	Semen analysis.			
7	Examination of blood parasites.			
8	Biopsy examination for visceral leishmaniasis.			
9	Skin scraping for cutaneous leishmaniasis.			
10	Skin scraping for scabies			
11	Other examination- tests			

C. Quality control:

No	tasks	Trainee (tick appropriate column)		Trainers 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			
5	Quality control of sterilized materials.			

Cyto-Histopathology

Name of hospital :-_____**section:-**_____

Intern name :-_____**university ID**:-_____

Rotation period :-_____

Goal :- to acquire practical skills of histo and cytopathological 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 .

A-Specimens reception:

No	Tasks	Trainee (tick appropriate column)		Trainers 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 cytopathology.			
4	Examine the labeling of the container and request slip for the type of test requested.			
5	Register specimens in laboratory information system or logbook.			
6	Ensure handling and preservation of specimens in histopathology laboratory.			
7	Receiving and filing of paraffin blocks, slides, request and reports.			

B-Techniques and procedures:

No	Tasks	Trainee (tick appropriate column)		Trainers signature
		Observe	Perform	
I	**Specimens handling protocols 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.			
	Pre			
7	Preparation of smears for cytopathology.			
8	Preparation of cell blocks for cytopathology.			
II	**Microtomy:**			
1	Specimens microtomy and related protocols.			
2	Understands and applies standard specimens 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 .			
4	Application of coverslip.			

C-Quality control:

No	Tasks	Trainee (tick appropriate column)		Trainers 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 .			
5	Quality control of biological.			

قائمة متابعة مهارات التعامل مع الأجهزة والأدوات المستخدمة

Instrument name	Department			Trainer signature
		Observe	Perform	

Summary of Internship Evaluation

Intern name :_____

Intern university ID:_____

Name of the hospital :_____

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No	Clinical discipline	Final assessment	
1	Main specimen reception	**Percentage (%)**	**Grade**
2	Phlebotomy		
3	Biochemistry		
4	Hematology		
5	Blood bank		
6	Microbiology		
7	Serology and immunology		
8	Parasitology		
9	Cyto-Histopathology		
	Total percentage (%) = sum of all %/ 9		
	Final grade		

–Name of laboratory training Coordinator_____

-Signature of laboratory training Coordinator_____**date**:_____

مدير ادارة التدريب في الكلية **أمين الكلية** **نائب العميد** **عميد الكلية**