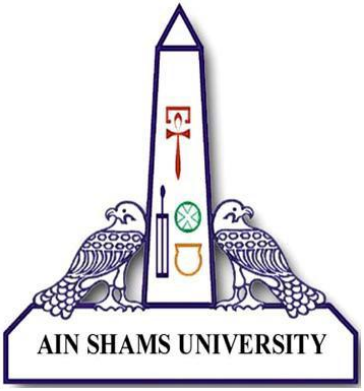

Faculty of Medicine
Ain Shams University

Postgraduate Studies

Doctorate Degree in Clinical Pathology

درجة الدكتوراه في الباثولوجيا الاكلينيكية

Program Code: CP700

Program Guide and Logbook

C a n d i d a t e C u r r i c u l u m v i t a e

[Name]

Please attach your recent photo

[telephone no]

[mobile no]

[mailing address]

[email address]

[postcode]

Experience

[organization]

[your present job title]

[start date]

[location]

[responsibilities]

[organization]

[previous job title]

[start and end date]

[location]

[responsibilities]

[organization]

[previous job title]

[start and end date]

[location]

[responsibilities]

Education

[certificates]

[start and end date]

[school or college]

Training

[any other training that will be useful in your job]

Filled by post graduate authorities

Date of Registration

First semester _____

Second semester _____

Third semester _____

Fourth semester _____

Fifth semester _____

Sixth semester _____

TABLE OF CONTENTS:

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I – WELCOME STATEMENT:

The Department of Clinical Pathology welcomes you to the Doctorate degree in Clinical Pathology. As a department we are committed to medical student education and continuously strive to improve their educational experience.
This handbook presents information guide and logbook activity of the Doctorate degree in Clinical Pathology administered by the Clinical Pathology Department, Faculty of Medicine, Ain Shams University.

II - MISSION STATEMENT:

The preparation of a competent graduate, who is able to compete on both national and regional levels, capable of life long learning, training and tutoring, while adhering to the codes of practice of medical health services and ethics.
The college as well, seeks continuous development of programs and courses. It also enhances expansion of applied scientific research and health programs for community services and environmental development.
Moreover, through providing distinguished academic and research cadres of teaching staff, supporting the administrative system and sustainability of own resources, the college is able to achieve goals and objectives.

The mission of the department is to develop clinical pathologists who are dedicated to the betterment of society. This will be achieved by focusing on continuous improvement of knowledge, a commitment to excellence in learning and gathering of information and enhancement of laboratory skills implemented in a safe environment.

III – SENIOR SUPERVISOR AND AFFILIATED DEPARTMENTS AND HOSPITALS

SENIOR SUPERVISOR

Prof.

E-mail:

AFFILIATED DEPARTMENTS AND HOSPITALS

Hospital of Nasser Institute
Military Academy
Police hospital

Hospitals of other universities
Nasr city hospital of medical insurance

IV – PROGRAM SPECIFICATIONS

A- Basic Information

1. Program title:
Doctorate in Clinical Pathology
Program type: Single ■ ☐ ☐

3. Faculty
Faculty of Medicine

4. Department
Clinical Pathology Department

5. Assistant coordinator
……

6. Co-ordinator
……

7. Last date of program approval:
……

B- Professional Information:

1. Program aims:

By the end of the program of doctorate degree, the student will be a trained specialist in clinical pathology, equally qualified in clinical chemistry, haematology, immunology and microbiology, with the aim of efficiently managing a clinical laboratory

2. Intended learning outcomes (ILOs):

a. Knowledge and understanding:

By the end of the program the candidate will be able to:

a1 – Know different techniques and instruments used in the laboratory.
a2 - Recognize clinical application and reference values of different tests performed in the laboratory

a3 - Recall different methods of assay for routine laboratory tests
a4 – Discuss different aspects of automation.
a5- Recognize the pathophysiology of different diseases and organ dysfunctions and the appropriate tests used for the diagnosis and follow up of each

b. Intellectual Skills:

By the end of the program the candidate will be able to:

b1- Interpret the results of different tests
b2- Apply quality control measures
b3 - Apply infection control and safety measures in the laboratory.
b4- Select tests appropriate for diagnosis, prognosis, follow up and monitoring of treatment for common diseases and malignancies
b5- Able to establish laboratories at different service levels
b6- Design and construct scientific research work through data collection, performance of new tests, statistical work to analyze and present data in the form of thesis presentation

c. Professional and practical skills :

By the end of the program the candidate will be able to:

c1- Use basic laboratory instruments to perform efficiently routine and some research parameters
c2- Manage with fair quality a clinical pathology laboratory with its different specialties.
c3-Master the techniques of specimen collection, handling and processing

d. General and transferable skills:

By the end of the program the candidate will be able to:

d1 - Think creatively and innovatively, with individual initiative and ability to work in a team.
d2 - -Undergo fruitful laboratory- physician interaction to ensure correct decision making.
d3 - Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation.

3. Academic standards: (Benchmarks)

Academic Reference Standard (ARS) of NAQAAE guided by the curriculum of the Royal College of Clinical Pathology

4. Curriculum structure and contents:

4a- Program duration:

3 years (six semesters)

4b- Program structure:

المناهج			
المقررات الدراسية		الكود	الساعات المعتمدة
متطلبات الكلية	دورة أساسيات البحث العلمي		
الجزء الأول	لا يوجد		
الرسالة			15
الجزء الثانى			
	كيمياء أكلينيكية	CP7001	6
	أمراض الدم المعملية	CP7002	6
	المناعة الاكلينيكية	CP7003	6
	الميكروبيولوجى الاكلينيكى	CP7004	6
المقررات الاختيارية	يتم اختيار مادة واحدة من: 1- كيمياء أكلينيكية متقدمة 2- أمراض الدم المعملية ا لمتقدمة 3- مناعة اكلينيكية متقدمة 4- الميكروبيولوجى اكلينيكى متقدم	E7061 E7062 E7063 E7064	6
كراسة الأنشطة			15
المجموع			60

5. Program courses:

a. Compulsory courses:

Code	Course title	No of hours (Actual)			
		L	P	F	SDL
CP7001	Advanced clinical chemistry 1 course specifications	60	60		
CP7002	Advanced laboratory hematology1course specifications	60	60		
CP7003	Advanced clinical immunology 1 course specifications	60	60		

CP7004	Advanced clinical microbiology 1 course specifications	60	60		

L: Lecture, C: Clinical, F: field and SDL: Self directed learning

b. Elective courses

Code	Course title				
		L	C	F	SD
E7061	Advanced clinical chemistry 2 course specifications	60	60		
E7062	Advanced laboratory hematology2course specifications	60	60		
E7063	Advanced clinical immunology 2 course specifications	60	60		
E7064	Advanced clinical microbiology 2 course specifications	60	60		

L: Lecture, C: Clinical, F: field and SDL: Self directed learning

6. Program admission requirements:

المادة (7): يشترط لقيد الطالب للحصول على درجة الدكتوراه :-

1- أن يكون حاصلاً على درجة الماجستير في مادة التخصص أو إحدى المواد الأساسية المتصلة بها من إحدى الجامعات المصرية أو على درجة معادلة لها .

2- موافقة جهة العمل على متطلبات الدراسة.

3 – بالنسبة لدرجة الدكتوراه في أمراض الدم المعملية تعتبر درجة الدكتوراه في الباثولوجيا الإكلينيكية مؤهلة لها 0

4- تسديد الرسوم ومصاريف التدريب وإستهلاك الأجهزة وإستيفاء المستندات المطلوبة في الملحق (2) 0

5- التفرغ للدراسة لمدة خمس فصول دراسية على الأقل قبل دخول امتحان الجزء الثاني. ويمكن أن يتم التدريب لنفس المدة على الأقل فى احد المستشفيات أو المراكز العلمية المعتمدة من الكلية بعد أستيفاء الشروط التى تحددها الأقسام المختصة.

7. Regulation for progression and program completion

مادة (8): بالنسبة للتسجيل لدرجات الدكتوراه فيتم مرتين فى العام : الأولى من أول يوليو حتى آخر أغسطس والثانية من أول نوفمبر حتى آخر ديسمبر 0

مادة (9): توزع الدراسة فى كل عام جامعى على فصلين دراسيين مدة كل منهما خمسة عشر اسبوعاً . يبدا الاول فى أول أكتوبر ويبدا الثانى فى منصف فبراير. مع تنظيم فصل دراسى صيفى مكثف لمدة ستة اسابيع . و يتم التسجيل للفصل الدراسى قبل اسبوعين من بدايته على الاقل بعد إستيفاء الشروط حسب المقررات المسجلة. ولاينبغى أن يزيد العبء الدراسى فى الفصل الواحد عن 6 ساعات معتمدة. ويجوز للطالب تعديل المقررات خلال اسبوعين من بداية الفصل الدراسى (بالحذف او الاضافة). كما يجوز له الانسحاب خلال سته اسابيع من احد المقرارت دون احتسابه راسباً فيه.

مادة (17): مدة الدراسة للحصول على الدكتوراه ستة وثلاثون شهراً (ست فصول دراسية) يجتاز خلالهم الطالب برنامجاً تدريبياً متكاملاً بالقسم طبقاً للساعات المعتمدة الموضحة بالباب الخامس ويستوفى خلالها المطلوب منه فى كتيب متابعة الأنشطة ولا يسمح له بدخول الإمتحان قبل إستيفاء ثلاثة أرباع المطلوب منه من الساعات المعتمدة.

مادة (18): مدة الدراسة في الجزء الأول للدكتوراه إن وجد فصل دراسي واحد يجتاز بعده الطالب إمتحاناً ولا يشترط النجاح فيه بالكامل للإنتقال للدراسة في الجزء الثاني ويشترط خلالها التدريب بإحدى المستشفيات الجامعية أو المراكز المعتمدة من القسم ولجنة الدراسات العليا بالكلية سواء بالداخل أو الخارج على أن يتم إستكمال الدراسة طبقاً للساعات المعتمدة.

مادة (19): يقوم الدارس لدرجة الدكتوراه بتسجيل موضوع الرسالة مع القيد للدرجة ولا تجوز مناقشة الرسالة قبل مرور عامين على التسجيل للدرجة ولا يخصص لها درجات.

مادة (20): يقوم الدارس لدرجة الدكتوراه بإستيفاء متطلبات الجامعة قبل التسجيل ومتطلبات الكلية ومناقشة الرسالة قبل دخول إمتحان الجزء الثاني. ومتطلبات الجامعة هي الحصول على شهادة التويفل في اللغة الإنجليزية (مجموع 550 درجة) ومتطلبات الكلية هى حضور دورات معتمدة من لجنة الدراسات العليا بالكلية فى مجال التخطيط والدراسات الطبية والإحصاء الطبي أو إجتياز إختبارات خاصة تحددها اللجنة.

مادة (21): الساعات المعتمدة لدراسة الدكتوراه ستون ساعة معتمدة على الأقل ويخصص منها خمس عشرة ساعة لكتيب متابعة الأنشطة وخمس عشرة ساعة للرسالة وست ساعات على الأقل للجزء الأول إن وجد.

Assessment Schedule and Weighing of Assessments:

Item			Mark			Points	GPA score	حالة الطالب Student state
			End of semester	During semester	Total			
First semester (If present)			300	80	380			
Second semester				80	80			
Third semester				80	80			
Fourth semester				80	80			
Fifth semester				80	80			
Sixth semester Final exam	Written		1200 *		1200			
	Oral							
	Practical /Clinical							
Total			1500	400	1900			

*** 1500 if there is no first semester**

ملحوظة: تعادل درجات الطالب طبقا للنقاط على الوجه التالى:

1 -	90 % فأكثر	:	4	نقاط A
2-	من85% حتى أقل من 90 %	:	3.67	نقاط A^-
3 -	من80% حتى أقل من 85%	:	3.33	نقاط B^+
4 -	من75% حتى أقل من 80%	:	3.00	نقاط B
5 -	من70% حتى أقل من 75%	:	2.67	نقاط B^-
6 -	من65% حتى أقل من 70%	:	2.33	نقاط C^+
7-	من62% حتى أقل من 65%	:	2.00	نقاط C
8 -	من60% حتى أقل من 62%	:	1.67	نقاط C^-
9 -	أقل من 60%	:	صفر	F

مجموع درجات الامتحان النهائى للدبلوم العالى والماجستير 1200 درجة منها 300 درجة للجزء الأول ومجموع درجات الامتحان النهائى للدكتوراه 1500 درجة منها 300 درجة للجزء الأول إن وجد.

ويضاف إليها المعدل الفصلى التراكمى بما يوازى 300 درجة للدبلوم العالى والماجستير و400 درجة للدكتوراه .

ويتم حساب المعدل الفصلى (GPA) على أساس مجموع حاصل ضرب نقاط كل مقرر مضروباً فى عدد ساعاته المعتمدة مقسوماً على الساعات المعتمدة للمقررات التى درسها الطالب فى الفصل الدراسى. كما يتم حساب المعدل التراكمى للطالب (CGPA) على أساس مجموع حاصل ضرب النقاط التى حصل عليها الطالب فى كل مقرر مضروباً فى عدد ساعاته المعتمدة مقسوماً على مجموع الساعات المعتمدة الكلية.

فى حالة الرسوب فى مادة أو مجموعة من المقررات فى الدبلوم أوالماجستير أو الدكتوراه يتم الإعادة فى المادة أو المجموعة فقط. ويتم حساب التقدير الفعلى الذى يحصل عليه فى أول إعادة فقط أما إذا تكرر رسوبة فيحسب له عند النجاح تقدير 60% فقط (اى1.67 نقاط اى C^-).

ADVANCED CLINICAL CHEMISTRY1 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A- Basic Information

Course Title: Advanced Clinical Chemistry 1 **Code: CP7001**

6 credit hours **Lecture: 3hr|month** **Total: 60**

Practical: 3hr|month **Total: 60**

Co-ordinator

Head of Clinical Chemistry Unit

B - Professional Information

1- Course Aims:

a) Develop a firm, thoughtful and analytically creative understanding of the theory and practice of clinical chemistry.

b) Develop laboratory doctors who are well trained in clinical chemistry and can efficiently manage clinical laboratories that offer routine clinical chemistry tests.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 **-** Discuss different diseases and various organ dysfunctions; their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2**-**Identify the different laboratory tests used for screening, diagnosis and follow up of various disorders including: renal, hepatic, cardiac, metabolic and hormonal disturbances and some malignant disorders.

a3**-**Recognize the different techniques used in chemical pathology with regards to principle, components, types, advantages and disadvantages. These techniques include spectrophotometry, fluorometry, chemiluminescence, nephelometry, turbidimetry, electrophoresis and electrochemistry**.**

a4- List the different basic medical statistical methods used in data analysis, both qualitative and normally distributed quantitative results, together with establishment of reference values and evaluation of the diagnostic performance of each laboratory test

a5-Recognize the basic concepts of automation of laboratory techniques.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1**-** Select the appropriate tests used for screening, diagnosis, and follow up of various disease states taking into consideration the concept of cost effectiveness.

b2 -Integrate clinical and laboratory findings for proper interpretation of different laboratory results for correct medical decision- making.

b3 - Upgrade laboratory performance in healthcare units and small Labs.

b4 - Plan medical research targeting high quality community service.

c- Professional skills

By the end of the course the candidate will be able to:

c1-Master the techniques of specimen collection, handling and processing.

c2- Efficiently perform routine laboratory tests.

c3-Apply infection control and safety measures in the Lab.

c4- Implement internal quality control measures.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Think creatively and innovatively, with individual initiative and ability to work in a team.

d2 -Undergo fruitful laboratory- physician interaction to ensure correct decision making.

d3 -Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation

d4 - Implement safe laboratory procedures

3- Course content:

First semester : CP7001a

Topics	No. of hours			
	L	T	C/P	SDL
Instrumentation (basic)	3		2	
Enzymes	4			
Liver	5			
Pre-analytical sources of error			2	
Spectrophotometry, end-point			2	
Total protein, albumin			2	
Centrifuge, acid, glassware			2	
Glucose, glycated Haemoglobin			2	

Second semester: CP7001b

Topics	No. of hours			
	L	T	C/P	SDL
Lipids	2		2	
Biological fluids	2			
Protein	4			
Kidney	4			
Creatinine and bilirubin			2	
Cholesterol and triglycerides			2	
Urea and uric acid			2	
Calcium and phosphorus			2	
Calculations			2	

Third semester: CP7001c

Topics	No. of hours			
	L	T	C/P	SDL
Acid-base	5			
Statistics	4		3	
Evaluation of methods	1			
Tumour markers	2			
Introduction to kinetic measures.			1	
CKand LDH			2	
AST and ALT			2	
ALP and ACP			2	
Amylase and lipase			2	

Fourth semester: CP7001d

Topics	No. of hours			
	L	T	C/P	SDL
Diabetes	3		2	
Hypoglycaemia	1			
Thyroid	2			
Pregnancy and fertility	3			
Parathyroid	3			
Urine analysis			4	
Quality control			6	

Fifth semester: CP7001e

Topics	No. of hours			
	L	T	C/P	SDL
Adrenal	2			
Pituitary	1			
Basics of molecular biology	2			
Cardiac markers	2			
Advanced statistics (1)	2			
Instrumentation	2		2	
Automation	1		2	
Electrophoresis			6	
Semen analysis			2	

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills

4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written exam	180
4.2 practical exam	90
4.3 oral exam	30
4.4 during-semester evaluation	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)

5.2- Essential Books (Text Books)

1-Teitz Textbook of Clinical Chemistry and Molecular Diagnostics,4th edition,Elsevier Saunders, Westline Industrial Drive St. Louis Missouri,2007

2- Clinical Chemistry, from Principles to Pracice. 2nd Edition.2008

5.3- Recommended Books:

Clinical Chemistry: Principles, procedures, correlations, 4th edition. Michael L.Bishop, Janet L.Duben-Engelkirk and Edward P. Fody

5.4-Periodicals, Web Sites:

medline.com. cpainshams.com

Journals: Journal of Clinical Chemistry (available in the library of Ain Shams Specialized Hospital)

ADVANCED LABORATORY HEMATOLOGY 1 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

B- Basic Information

Course Title: Advanced Laboratory Hematology 1 Code: CP7002

6 credit hours **Lecture: 3hr|month** **Total: 60**
Practical: 3 hr|month **Total: 60**

Co-ordinator

Head of Hematology Unit

B - Professional Information

1- Course Aims:

a) Develop a firm, thoughtful and analytically creative understanding of the theory and practice of hematology.

b) Develop laboratory doctors who are well trained in hematology and can offer consultation regarding all aspects related to its applications.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 **-** Discuss different hematological disorders; their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2**-**Identify the different laboratory tests used for screening, diagnosis and follow up of various disorders including: red cells, white cells, platelets, coagulation, hemostasis and malignant disorders.

a3**-**Recognize the different techniques used in laboratory hematology with regards to principle, components, types, advantages and disadvantages. These techniques include automated counters, coagulation, flowcytometry, electrophoresis**,** cytogenetics, histopathology, bone marrow transplantation and molecular techniques.

a4- List the different basic medical statistical methods used in data analysis, both qualitative and normally distributed quantitative results, together with establishment of reference values and evaluation of the diagnostic performance of each laboratory test.

a5**-**Recognize the basic concepts of automation of laboratory techniques.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1**-** Select the appropriate tests used for screening, diagnosis, and follow up of various hematological disorders taking into consideration the concept of cost effectiveness.

b2 -Integrate clinical and laboratory findings for proper interpretation of different laboratory results for correct medical decision- making.

b3 - Upgrade laboratory performance in healthcare units and small Labs.
b4 - Plan medical research targeting high quality community service.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Master the techniques of specimen collection, handling and processing.
c2- Efficiently perform routine laboratory tests.
c3-Apply infection control and safety measures in the Lab.
c4- Implement internal quality control measures.

d- General and transferrable skills

By the end of the course the candidate will be able to:

d1- Think creatively and innovatively, with individual initiative and ability to work in a team.
d2 -Undergo fruitful laboratory- physician interaction to ensure correct decision making.
d3 -Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation
d4 - Implement safe laboratory procedures

3- Course content:

First semester : CP7002a

Topics	No. of hours			
	L	T	C/P	SDL
Hematopoiesis	2			
Lymphocyte development	1			
Physiology and evaluation of hemostasis	2			
Introduction to cytogenetics	1			
Introduction to molecular biology	2			
Blood transfusion	4			
Sampling, anticoagulants, Concept of normal			1	

values, Critical values in hematology				
Hemoglobinometry			2	
Hemocytometer, manual total WBC count, manual platelet count			3	
How to prepare and stain a blood film, normal differential count, absolute values			3	
ESR, Hct, RBC indices, reticulocyte count			3	

Second semester: CP7002b

Topics	No. of hours			
	L	T	C/P	SDL
Iron metabolism and iron deficiency anemia	2			
Disorders of heme synthesis and iron overload	1			
Megaloblastic anemia	2			
Hereditary diseases of red cell membrane	1			
Disorders of red cell metabolism	2			
Hemoglobin and inherited disorders of globin synthesis	2			
Acquired hemolytic anemias	1			
Anemia of chronic disorders	1			
Bleeding time, PT, PTT, TT			2	
Blood grouping and cross matching			2	
Deficiency anemias			5	
Iron stain			1	
Hemolytic anemia			2	

Third semester :CP 7002c

Aplastic anemia and bone marrow failure	1			
Benign leucocyte disorders	1			
The spleen	0.5			
Lysosomal storage disorders	0.5			
Molecular basis of leukemia and lymphoma	1			
Acute leukemias	1.5			
Minimal residual disease in acute leukemia	1			
Myelodysplasia	1.5			
Chronic myeloproliferative disorders	1.5			
Chronic lymphoproliferative disorders	1.5			
Plasma cell neoplasms	1			

Benign WBC disorders			2	
Bone marrow biopsy, normal bone marrow, How to report on BM			3	
Malignant WBC disorders			3	
Hypersplenism, ITP			2	
Lysosomal storage disease			2	

Fourth semester :CP7002d

Platelet disorders	2			
Inherited bleeding disorders	4			
Acquired coagulation disorders	2			
Thrombophilia	1			
Stem cell transplantation	1			

Blood transfusion in special clinical conditions	2			
Platelet aggregation test			2	
Hb electrophoresis			3	
Factor assay, fibrinogen, FDPs, lupus anticoagulant mixing experiments			3	
Blood grouping and cross matching (II)			2	
Separation and preservation of blood components			2	

Fifth semester (CP7002e):

Automated cell counters	3			
Flow cytometry: principle and applications	3			
Molecular techniques and applications	2			
Cytogenetic techniques and applications	2			
Trephine biopsy	2			
Chronic lymphoproliferative disorders			2	
Chronic myeloproliferative disorders			2	
Automated counter reports			2	
Flowcytometry			2	
Sources of error in hematology testing			2	
Problem solving			2	

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills
4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments

4.1 written	180
4.2 practical	90
4.3 oral	30
4.4 during-semester	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)
5.2- Essential Books (Text Books)
1-Postgraduate Hematology, 5th edition, 2005
2-Wintrobe Clinical Hematology, 12th edition, 2009
3-William's Hematology.
4- Practical Hematology, Dacie and Lewis, 2007
5.3- Recommended Books
5.4-Periodicals, Web Sites:
medline.com. cpainshams.com, www.who.int, www.isth.org, www.bloodmed.com

5.5-Journals: Journal of Egyptian Hematology (available in the library of Ain Shams Specialized Hospital), British Journal of Hematology, Blood, Journal of Thrombosis and Hemostasis

ADVANCED CLINICAL IMMUNOLOGY1 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A-Basic Information

Course Title: Advanced Clinical Immunology1 **Code: CP7003**

6 credit hours **Lecture: 3hr|month** **Total: 60**

Practical: 3hr|month **Total: 60**

Co-ordinator

Head of Immunology Unit (Prof. Mona Rafik)

B - Professional Information

1- Course Aims:

a-To acquire an overall understanding of the immunological basis for the immune mediated diseases , the clinical presentation and diagnosis of each disorder and the respective diagnostic tests and quality assurance for diagnosing and monitoring therapies.

b-To develop the expertise needed to carry out and advise on the application of laboratory investigations to diseases of the immune system, to interpret the results generated by such investigations, to be aware of the limitations of laboratory assays,

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 – Know detailed knowledge of principles of Immunology.

a2- Have specialized knowledge of the immune-mediated diseases

their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2**-**Identify the different laboratory tests used for screening, diagnosis and follow up of immune mediated disorders including: autoimmunity, hypersensitivity, transplantation, immunedeficiency and malignant disorders.

a3-Recognize the different techniques used in immunology with regards to principle, components, types, advantages and disadvantages. These techniques include radial immunodiffusion, nephelometry/turbidimetry, protein electrophoresis, immunofixation, direct and indirect immunofluorescence, enzyme linked immunoassays (ELISA), western (protein) blotting. Southern (DNA) blotting, Northern (RNA) blotting, polymerase chain reaction, isolation of cell (sub)populations, preparation of cell suspensions and cell subset separations, flow cytometry and PCR,

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Select the appropriate tests used for screening, diagnosis, and follow up of various disease states taking into consideration the concept of cost effectiveness.
b2- Have interpretative skills so that a clinically useful opinion can be derived from the laboratory data.
b3- Troubleshoot and upgrade laboratory performance in healthcare units and small Labs.

c- Professional skills:

By the end of the course the candidate will be able to:

c1- Master the procedures, technology, quality assurance and limitations of laboratory diagnostics of immunemediated diseases
c2- Gain technical knowledge of laboratory immunology including the implementation of quality control and quality assurance procedures.
c3- Perform efficiently routine immunological laboratory tests.
c4- Apply infection control and safety measures in the Lab.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Think creatively and innovatively, with individual initiative and ability to work in a team.
d2 -Undergo fruitful laboratory- physician interaction to ensure correct decision making.
d3 -Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation
d4 - Implement safe laboratory procedures

3- Course content:

First semester : CP7003a

Topics	No. of hours			
	L	T	C/P	SDL
Section 1- Introduction to immunology				
1 General Properties of Immune Responses	2			
2- Cells and Tissues of the Immune System	2			
Section II Recognition of Antigens				
3- Antibodies and Antigens	3			
4- The Major Histocompatibility Complex	1.5			
5- Antigen Processing and Presentation to T Lymphocytes	1.5			
6- Antigen Receptors and Accessory Molecules of T Lymphocytes	2			
QUALITY ASSURANCE AND QUALITY CONTROL in the IMMUNOLOGY LAB			3	

Enzyme-Linked Immunosorbent Assay o **How to make an Elisa kit** o **Troubleshooting**			3 1.5	
HLA TYPING (microctotoxicity)			3	
Assessment of complement function			1.5	

Second semester : CP7003b

Topics	No. of hours			
	L	T	C/P	SDL
Section III Maturation, Activation, and Regulation of Lymphocytes **7. Lymphocyte Maturation and Expression of Antigen Receptor Genes** **8 .Activation of T Lymphocytes** **9 .B Cell Activation and Antibody Production** **10.Immunologic Tolerance**	1.5 1.5 2.5 1.5			
Section IV Effector Mechanisms of Immune Responses **11 -Cytokines** **12 -Innate Immunity** **13- Effector Mechanisms of Cell-Mediated Immunity**	2 1.5 1.5			
Polymerase chain reaction DNA extraction RNA exraction Complimentary DNA Primers and Probes Master Mix			3 3 3 1.5 1.5	

Third semester : CP7003c

Topics	No. of hours			
	L	T	C/P	SDL
Section IV Effector Mechanisms of Immune Responses **14- Effector Mechanisms of Humoral Immunity**	1.5			

15- Immunity to Microbes	1.5			
Section V The Immune System in Disease				
16 -Transplantation Immunology				
o Prevention and Treatment of	1.5			
Allograft Rejection	1.5			
o Stem Cell Transplantation	1			
o Solid Organ Transplantation				
17 -Immunity to Tumors	1			
o Immunotherapy for Tumors				
18 -Diseases Caused by Immune Responses: Hypersensitivity and Autoimmunity	2			
19 Immediate Hypersensitivity	1			
20-Immune-mediated Renal Disease	1			
Immuno Blotting				
o Western			1.5	
o RIBA			3	
o Southern blotting and northern blotting			1.5	
Lymphocyte separation and cell storage			6	

Fourth semester : CP7003d

Topics	No. of hours			
	L	T	C/P	SDL
Section V The Immune System in Disease				
21-Immunological Aspects of Cardiac Disease	1.5			
22 - Autoimmune diseases				
o Autoimmune Endocrinopathies	1.5			
o Autoimmune Liver Diseases	1.5			
o Rheumatoid Disease and	1.5			
Spondylarthropathies	1.5			
o Connective Tissue Diseases	1.5			
o Vasculitis				
23- Other Immune-mediated organ specific immune mediated Disorders	1.5			
24-Immune complex diseases	1.5			
Immunofluorescence				

Laboratory tests for assessment of Autoimmune diseases o Autoantibody Profiles in Connective Tissue Diseases and Rheumatoid Disease ssociated with Vasculitic Syndromes and Renal Diseases o Autoantibodies Associated with Liver and Gastrointestinal Diseases o Autoantibodies Associated with Endocrine Diseases and pernicious Anaemia o Other Organ-specific Autoimmunity			3 1.5 1.5 1.5	
Immunofixation			3	
Automated immunoassay systems			1.5	

Fifth semester : CP7003e

Topics	No. of hours			
	L	T	C/P	SDL
Section V The Immune System in Disease **25- Immune-mediated Haematological Conditions** **26- Malignancies of the Immune System** **27-Immunodeficiencies** **28-Immune System Modulators** **29-Statistical methods used for interpreting laboratory data** **30- Selection and interpretation of laboratory tests: clinical relevance.**	1.5 1.5 1.5 1.5 3 3			
Flow Cytometry and Fluorescence Alternatives to Antigen-Antibody Reactions			6	
Laboratory tests for assessment of lymphocyte Function			3	

Laboratory tests for assessment of phagocytic cell Function			3	

4 - Student Assessment Methods

4.1 written exams to assess knowledge and intellectual skills
4.2 practical exams to assess professional and practical skills
4.3 oral exams to assess knowledge, attitude and communication skills
4.4 During-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written exam	180
4.2 practical exam	90
4.3 oral exam	30
4.4 During-semester evaluation	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)
5.2- Essential Books (Text Books)
a- Cellular and Molecular Immunology.Abul K. Abbas, Andrew H. Lichtman, Jordan S. Pober, Abdul K. Abbas. W B Saunders Co; ISBN: 0721682332;
b- Immunoassay Edited by Eleftherios P. Diamandis and Theodore K. Christopoulos Academic Press
5.3- Recommended Books
Immunobiology.Charles Janeway (Editor), Paul Travers. Garland Pub; ISBN: 081533642X;
5.4-Periodicals, Web Sites:
Nature immunology
http://www.fbr.org/swksweb/swklab.html - *(*Lab Exercises)
Immunology cases and simulations

ADVANCED CLINICAL MICROBIOLOGY1 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine
Course specifications

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A- Basic Information

Course Title: AdvancedClinical Microbiology 1 Code: CP7004

Credit hours: 6 Lecture: 3hr|month Total: 60

Practical: 3hr|month Total: 60

Co-ordinator

Head of Clinical Microbiology Unit

B - Professional Information

1- Course Aims:

a) Identify different pathogenic organisms and methods of their isolation.

b) Recognize and use different types of antibiotcs according to clinical situation.

c) Recognize criteria of sample rejection and appropriate methods of sample collection.

d) Integrate clinical findings with lab results into meaningful diagnostic formulation .

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1- Identify pathogenesis of different infectious diseases

a2- Recognize methods of laboratory diagnosis for different pathogens.

a3- Describe different groups of antibiotics and identify their mode of action.

a4 –Discuss mechanisms of antibiotic resistance.

a-5 Define nosocomial infections and identify mode of transmission.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Choose the appropriate laboratory diagnostic tests for common infectious diseases.

b2- Analyze the results of different microbiological cultures

b3 Analyze the results of different serological tests .

b4- Select the appropriate antibiotic for different clinical situations

b5- Explain the mechanism of resistance to different antibiotics.
b6- Analyze the result of antimicrobial resistance patterns.

c- Professional skills

By the end of the course the candidate will be able to:
c1- Perform microbiological diagnostic tests on different clinical specimens
c2 Interpret different microbiological culture results
c3 –Read and interpret antibiotic susceptibility results
c4- Read and interpret antibiotic resistance pattern
c5 –Interpret different serological tests

d- General and transferable skills

By the end of the course the candidate will be able to:
d1 – Formulate a laboratory diagnostic plan for common infectious diseases.
d2 – Adopt suitable measures for safety and infection control.
d3- Develop good working communication skills with colleagues .
d4- Develop laboratory – physician interaction to insure proper decision making .

3- Course content:

First semester: CP7004a

Topics	No. of hours			
	L	T	C/P	SDL
Phases of diagnostic cycle and rejection criteria I	1			
Phases of diagnostic cycle and rejection criteria II	1			
Upper respiratory tract infections	1			
Lower respiratory tract infections	1			
Mycobacterial infections I	2			
Mycobacterial infection II	2			
GIT infections	2			
Eye infections	1			
Pyrexia of unknown origin	1			
Bacteremia and septicemia	1			
Cardiac infection	1			
Neonatal infections	1			
Upper respiratory tract specimen culture & interpretation		1	1	
Lower respiratory tract specimen culture & interpretation		1	1	
Diagnosis of mycobacterial infection		1	1	
Stool analysis and culture		1	1	

Blood culture & interpretation		1	1	
Revision		2		
Post course evaluation				

Second Semester: CP7004b

Topics	No. of hours			
	L	T	C/P	SDL
Urinary tract infections	1			
Genital tract infections	2			
CNS infections I	1			
CNS infections II	1			
Wound infections	1			
Bone and joint infections	1			
Anaerobic infections	1			
Opportunistic infections	1			
Sexually transmitted diseases	2			
Hospital acquired infections	1			
Urine culture & interpretation		1	1	
Genital specimens culture & interpretation		1	1	
CSF & body fluids examination		1	1	
Swabs and pus culture		1	1	
Anerobic culture		1	1	
Revision		2		
Post Course assessment				

Third Semester: CP7004c

Topics	No. of hours			
	L	T	C/P	SDL
Antimicrobial chemotherapy I	1			
Antimicrobial chemotherapy II	1			
Principles of antimicrobial action and resistance I	1			
Principles of antimicrobial action and resistance II	1			
Laboratory methods of antimicrobial susceptibility I	1			
Laboratory methods of antimicrobial susceptibility II	1			

Laboratory safety in microbiological lab I	1			
Laboratory safety in microbiological lab II	1			
Quality assurance in microbiological lab I	1			
Quality assurance in microbiological lab II	1			
Automation in micobiological lab	1			
Hospital infection control	2			
Laboratory methods of antimicrobial suseptibility		1	2	
Interpretation of antibiotic resistance		3		
Interpretation of quality control of media, stain		3		
Automation in microbiology lab		3		
Infection control in microbilogical lab		1		
Revision and Quiz		1		
Post course evaluation				

Fourth Semester: CP7004d

Topics	No. of hours			
	L	T	C/P	SDL
General characteristics of viruses I	1			
Laboratory diagnosis of viruses I	1			
Respiratory virus infection I	1			
Exanthemas	1			
Herpes virus 1	1			
Herpes virus 2	1			
Blood borne infections	1			
Enterovirus infection I	1			
Enterovirus infection II	1			
Blood borne viruses and Hepatitis viruses	1			
ELISA technique and interpretation of each virus diagnosis I		2		
ELISA technique and interpretation of each virus diagnosis II		2		
PCR technique in viral diagnosis I		2		
PCR technique in viral diagnosis II		2		
Revision and Quiz		2		
Post course evaluation				

Fifth semester: CP7004e

Topics	No. of hours			
	L	T	C/P	SDL
Basic mycology I	1			
Basic mycology II	1			
Superficial and cutaneous mycotic infection	1			
Subcutaneous mycotic infection	1			
Opportunistic fungal infections	1			
Protozoal infection I	1			
Protozoal infection II	1			
Helminthes	1			
Helminthes	1			
Parasitic infection in different samples and mode of infection	1			
Mycotic culture media and stains			2	
Methods of identification of yeasts			2	
Methods of identification of moulds and dermatophytes			2	
Identification of Protozoa and stool examination			2	
Identification of helminthes			2	
Revision & Quez			2	
Post course evaluation				

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills
4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written exam	180
4.2 practical exam	90
4.3 oral exam	30
4.4 during-semester evaluation	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)
5.2- Essential Books (Text Books)
1- Murray Textbook of Manual of Clinical Micorobiology, Ninth Edition 2007

2- Baily & Scott's Diagnostic Microbiology, Twelvth Edition, 2007

5.3- Recommended Books

Koneman's color atlas and text book of diagnostic microbiology

5.4- Periodicals, Web Sites, etc

medline.com, cp ainshams.com

Journals: Journal of Clinical microbiology (available in the library of Ain Shams Specialized Hospital)

ADVANCED CLINICAL CHEMISTRY2 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications:

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Minor

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A - Basic Information

Course Title: Advanced Clinical Chemistry 2 **Code: E7061**

6 credit hours **Lecture: 3|month** **Total: 60**

Practical: 3|month **Total: 60**

Co-ordinator

Head of Clinical Chemistry Unit

B - Professional Information

1- Course Aims:

a) Develop a firm, thoughtful and analytically creative understanding of the theory and practice of clinical chemistry.

b) Develop laboratory doctors capable of managing a clinical chemistry laboratory, with motivation and comprehension of the concepts of quality with the aim of giving an excellent service to the society, as well as consultation in all aspects of clinical chemistry.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 **-** Discuss different diseases and various organ dysfunctions; their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2**-**Identify the different laboratory tests used for screening, diagnosis and follow up of various disorders including: renal, hepatic, cardiac, metabolic and hormonal disturbances and some malignant disorders.

a3**-**Recognize the different techniques used in chemical pathology with regards to principle, components, types, advantages and disadvantages. These techniques include spectrophotometry, fluorometry, chemiluminescence, nephelometry, turbidimetry, electrophoresis and electrochemistry, osmometry, chromatography and mass spectrometry.

a4- Appreciate basic concepts, definitions and clinical utility of therapeutic drug monitoring.

a5**-**Recognize the various phases of an automated system, point- of- care testing, basic concepts of molecular biology and PCR techniques and their applications in certain diseases.

a6-Apply inferential statistics includig tests of significance and correlation analysis of non-parametric data in addition to multivariate ROC curve analysis.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Select the appropriate tests used for screening, diagnosis, and follow up of various disease states taking into consideration the concept of cost effectiveness.

b2 -Integrate clinical and laboratory findings for proper interpretation of different laboratory results for correct medical decision- making.

b3 - Upgrade laboratory performance in health-care units and small labs.

b4 - Plan medical research targeting high quality community service.

b5- Reach high level of managerial skills.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Master the techniques of specimen collection, handling and processing.

c2- Perform Efficiently routine laboratory tests.

c3-Apply infection control and safety measures in the Lab.

c4- Implement TQM (total quality management) programs.

c5-Master special laboratory techniques as electrophoresis, column chromatography and user-defined application sheets on automated open systems.
c6- Plan Properly medical research with data analysis and enhance teaching skills.
c7- Manage efficiently a chemical pathology laboratory and demonstrate an effective interactive relationship with the staff.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Think creatively and innovatively, with individual initiative and ability to work in a team.
d2 -Undergo fruitful laboratory- physician interaction to ensure correct decision making.
d3 -Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation
d4 - Implement safe laboratory procedures

3- Course content:

First semester: E7061a

Topics	No. of hours			
	L	T	C/P	SDL
Mass spectrometry	2			
Chromatography	6			
POCT	4			
VMA			6	
Glycated haemoglobin			6	

Second semester: E7061b

Topics	No. of hours			
	L	T	C/P	SDL
Automation and user defined sheets	8			
Immunochemical techniques	4			
HPLC			6	
Laboratory safety			2	
Electrophoresis			4	

Third semester: E7061c

Topics	No. of hours

	L	T	C/P	SDL
Total quality management	10			
Geriatrics clinical chemistry	2			
Automation			2	
User defined sheets			6	
EQAS			4	

Fourth semester: E7061d

Topics	No. of hours			
	L	T	C/P	SDL
Electrochemistry, osmometry	2			
Therapeutic drug monitoring	2			
Pediatric clinical chemistry	2			
Separation techniques	2			
Advanced statistics (2)	4			
EQAS			2	
Evaluation			10	

Fifth semester: E7061e

Topics	No. of hours			
	L	T	C/P	SDL
Evidence based lab. Medicine	4			
Techniques of molecular biol.	5			
Identity problems	2			
Inherited disorders	1			
Immuno-chemical automation			4	
Inventory			4	
IT of lab. TAT			4	

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills
4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written exam	180
4.2 practical exam	90

4.3 oral exam	30
4.4 during-semester evaluation	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)

5.2- Essential Books (Text Books)

1-Teitz Textbook of Clinical Chemistry and Molecular Diagnostics,4th edition,Elsevier Saunders, Westline Industrial Drive St. Louis Missouri,2007

2- Clinical Chemistry From Principles to Practice. 2nd Edition.2008

5.3- Recommended Books

Clinical Chemistry: Principles, procedures, correlations, 4th edition. Michael L.Bishop, Janet L.Duben-Engelkirk and Edward P. Fody

5.4- Periodicals, Web Sites, etc

medline.com, cpainshams.com

5.5- Journals: Journal of Clinical chemistry, (available in the library of Ain Shams Specialized Hospital)

2-ADVANCED LABORATORY HEMATOLOGY 2 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications:

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A - Basic Information

Course Title: Advanced Laboratory Hematology 2 Code: E7062

6 credit hours Lecture: 3hrs/month total: 60 hrs

Practical: 3 hrs/month total: 60 hrs

Co-ordinator

Head of Laboratory Hematology Unit

B - Professional Information

1- Course Aims:

a) Develop a firm, thoughtful and analytically creative understanding of the theory and practice of laboratory hematology

b) Develop laboratory doctors capable of managing a hematology laboratory, with motivation and comprehension of the concepts of quality with the aim of giving an excellent service to the society.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 **-** Discuss different hematological disorders; their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2**-**Identify the different laboratory tests used for screening, diagnosis and follow up of various disorders including: red cells, white cells, platelets, coagulation, hemostasis and malignant disorders.

a3**-**Recognize the different techniques used in laboratory hematology with regards to principle, components, types, advantages and disadvantages. These techniques include automated counters, coagulation, flowcytometry, electrophoresis**,** cytogenetics, histopathology, bone marrow transplantation and molecular techniques.

a4- List the different basic medical statistical methods used in data analysis, both qualitative and normally distributed quantitative results, together with establishment of reference values and evaluation of the diagnostic performance of each laboratory test.

a5-Recognize the basic concepts of automation of laboratory techniques.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1**-**Select the appropriate tests used for screening, diagnosis, and follow up of various disease states taking into consideration the concept of cost effectiveness.

b2 -Integrate clinical and laboratory findings for proper interpretation of different laboratory results for correct medical decision- making.

b3 - Upgrade laboratory performance in health-care units and small labs.

b4 - Plan medical research targeting high quality community service.

b5- Reach high level of managerial skills.

c- Professional skills

By the end of the course the candidate will be able to:

c1-Master the techniques of specimen collection, handling and processing.

c2- Perform efficiently routine laboratory tests.
c3-Apply infection control and safety measures in the Lab.
c4- Implement TQM (total quality management) programs.
c5- Master special laboratory techniques as electrophoresis, column chromatography and user-defined application sheets on automated open systems.
c6**-** Plan properly medical research with data analysis and enhance teaching skills.
c7- Manage efficiently a hematology laboratory and demonstrate an effective interactive relationship with the staff.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Think creatively and innovatively, with individual initiative and ability to work in a team.
d2 -Undergo fruitful laboratory- physician interaction to ensure correct decision making.
d3 -Undergo proper problem-based learning and IT application for maximum knowledge collection and case presentation
d4 - Implement safe laboratory procedures

3- Course content:

First semester: E7062a

Topics	No. of hours			
	L	T	C/P	SDL
Hematopoiesis (hematopoietic organs, stromal microenvironment, adhesion molecules, growth factors and receptors and apoptosis)	4			
Unexplained anemia (microcytic, macrocytic and normocytic)	5	3		
Hb electrophoresis, HPLC, IEF			6	
Special stains			6	

Second semester: E7062b

Topics	No. of hours			
	L	T	C/P	SDL
Diagnosis of abnormal white cells	5	3		
Splenomegaly	2	2		
Transfusion medicine			2	
Bone marrow technique and examination			10	

Third semester: E7062c

Topics	No. of hours

	L	T	C/P	SDL
Bone marrow histopathology	3		4	
Bone marrow transplantation	3			
Advanced hematological techniques (FCM)	3		5	
Blood transfusion	3			
Platelet function tests,			3	

Fourth semester: E7062d

Topics	No. of hours			
	L	T	C/P	SDL
Diagnosis of lymphadenopathy	2	1		
Bleeding disorders	4	2		
Cytogenetics and molecular techniques	3		8	
chromogenic techniques and coagulometry			4	

Fifth semester: E7062e

Topics	No. of hours			
	L	T	C/P	SDL
Automation and quality management	4		8	
Diagnosis of thrombophilia	3	2		
Monitoring of anticoagulant therapy	2			
Hematological histopathology		1	4	

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills
4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written 180
4.2 practical 90
4.3 oral 30
4.4 during-semester 80
Total 380

5 - List of References:

5.1- Course Notes (paper and / or electronic)

5.2- Essential Books (Text Books)

1-Postgraduate Hematology, 5th edition, 2005

2-Wintrobe Clinical Hematology, 12th edition, 2009

3-William's Hematology,

4- Practical Hematology, Dacie and Lewis, 2007

5.3- Recommended Books

5.4-Periodicals, Web Sites:

medline.com. cpainshams.com, www.who.int, www.isth.org, www.bloodmed.com

5.5-Journals: Journal of Egyptian Hematology (available in the library of Ain Shams Specialized Hospital), British Journal of Hematology,Blood, Journal of Thrombosis and Hemostasis

ADVANCED CLINICAL IMMUNOLOGY 2 COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications:

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Minor

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

A - Basic Information

Course Title: Advanced Clinical Immunology2 Code: E7063

6 credit hours Lecture: 3|month Total: 60

Practical: 3|month Total: 60

Co-ordinator

Head of Immunology Unit (Prof. Mona Rafik)

B - Professional Information

1- Course Aims:

a) Develop a firm, inovative and analytically creative understanding of the theory and practice of clinical immunology.

b) Develop laboratory doctors capable of managing a clinical immunology laboratory, with motivation and comprehension of the concepts of quality with the aim of giving an excellent service to the society, as well as consultation in all aspects of clinical immunology.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 **-** Discuss different diseases and various organ dysfunctions; their aetiology, pathophysiology, and associated laboratory findings (normal and abnormal).

a2- Acquire the core body of knowledge necessary to understand the principles and to give consultative advice on the appropriate use of laboratory tests for prevention, diagnosis and treatment of Immune-mediated diseases

a3- Know the basic concepts of molecular diagnosis stem cell transplantation and nucleic acid testing techniques and their applications in immunologically mediated diseases .

a4- Know laboratory procedures and their diagnostic specificity and sensitivity for immune mediaed diseases

a5**-**Recognize the various phases of an automated system,

a6**-** Know the immunological basis of immune mediated diseases , a theoretical understanding of the basis of the tests conducted in the laboratory, including their limitations and quality assurance requirements in addition to technical competencies

b- Intellectual skills

By the end of the course the candidate will be able to:

b1-Select the appropriate tests used for screening, diagnosis, and follow up of various disease states taking into consideration the concept of cost effectiveness.

b2 -Integrate clinical and laboratory findings for proper interpretation of different laboratory results for correct medical decision- making.

b4 - Plan medical research targeting high quality community service.

b5- Understand the immunological mechanisms underpinning disease, as well as the application of diagnostic technology and its limitations

b6- Reach high level of managerial skills

c- Professional skills

By the end of the course the candidate will be able to:

c1- Perform efficiently routine laboratory immunological tests.

c2**-** Master special laboratory techniques as immunofixation, NAT, HLA typing,cell culture etc.

c3- Acquire skills required to direct a diagnostic Immunology Laboratory service with detailed knowledge of the immunological laboratory assays and ablity to provide interpretative advice on the clinical significance of the results obtained

c4- Clearly articulate an understanding of issues relating to standardisation and quality control/assurance for each of the diagnostic technologies, for example immunofluorescence, enzyme linked immunoassay, radioimmunoassay, agglutination and so on.

c5-. Understand the philosophy and methodology of research in human immunity.with research and critical appraisal

c6- Know basic techniques required for implementing relevant research projects.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Research and develop experience with critical assessment and evaluation of published work.

d2- Acquire data management skills in information technology including the use of spread sheets, data bases and statistical packages.

d3- Gain experience in all aspects of laboratory planning, budgetary control and management. The trainee should also gain experience in formulating departmental policies and developing leadership skills.

d4- Be familiar with all health and safety issues including their legal aspects.

d5- Acquire attitudes in order to be able to work as a consultant.

d6- Develop good working relationships with colleagues and the appropriate communication skills required for the practice of immunology.

d7- Acquire knowledge, skills and attitudes to act in a professional manner at all times.

d8- Acquire knowledge, skills and attitudes to provide appropriate teaching and to participate in effective research to underpin immunology practice

3- Course content:

Second semester: E7063a

Topics	No. of hours			
	L	T	C/P	SDL
Innate mmune System				
Antigens	1.5			
Natural killer cell biology	1.5			
Dendritic cells biology	1.5			

Organization and Expression of Immunoglobulin Genes **Antibodies**	3 1.5			
T-Cell Receptor	3			
Preparation of Elisa		6		
HLA typing by DNA technique		6		

Third Semester:7063b

Topics	No. of hours			
	L	T	C/P	SDL
T-Cell Maturation, Activation, and Differentiation	1.5			
B-Cell Generation, Activation, and Differentiation	1.5			
Cytokines **Cell-Mediated Effector Responses**	1.5 1.5			
Leukocyte Migration and Inflammation	3			
CELLULAR ACTIVATION	3			
Preparation of DNA and RNA **Agarose gel electrophoresis**		6		
Home made PCR		6		

FOURTH semester: 7063c

Topics	No. of hours			
	L	T	C/P	SDL

Immunoregulation	1.5			
Autoimmunity **Molecular approaches in the understanding of autoantibody-mediated injury**	1.5 1.5			
Neuroimmunoendocrine interactions	1.5			
Immune system and nutrition	1.5			
Immunotoxicology (drug or environmental induced immunodisorders) ▪ Mechanisms of adverse reac immunotoxic compounds ▪ Clinical aspects of immune disorders induced by drugs or environmental chemicals	1.5			
TREATMENT OF IMMUNOLOGICAL DISORDERS	1.5			
Vaccines	1.5			
Tissue culture / aseptic technique		6		
Flow cytometry		6		

Fifth Semester: 7063d

Topics	No. of hours			
	L	T	C/P	SDL
Experimental Systems	3			
Stem cells ad Regenerative Medicine	6			

Tumor Immunology	1.5			
Hepatitis viruses and immunity	1.5			
Immunoelectrophoresis		6		
Theory and practice of laboratory investigations in clinical immunology.		3		
Guidelines for clinical use of the antinuclear antibody test and tests for specific autoantibodies to nuclear antigens		3		

Sixth Semester: E7063 e

Topics	No. of hours			
	L	T	C/P	SDL
Molecular Biology	6			
RNA	3			
Advanced Topics in Immunology	3			
lymphocyte proliferation assays		12		

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 written exam to assess knowledge and intellectual skills
4.2 practical exam to assess professional and practical skills
4.3 oral exam to assess knowledge, attitude and communication skills
4.4 during-semester evaluation to assess practical abilities

Weighing of Assessments:

4.1 written exam	180
4.2 practical exam	90
4.3 oral exam	30
4.4 During-semester evaluation	80
Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)
5.2- Essential Books (Text Books)

1- Cellular and Molecular Immunology. Abul K. Abbas, Andrew H. Lichtman, Jordan S. Pober, Abdul K. Abbas. W B Saunders Co; ISBN: 0721682332;

2-Immunoassay Edited by Eleftherios P. Diamandis and Theodore K. Christopoulos Academic Press

3- Immunobiology. Charles Janeway (Editor), Paul Travers. Garland Pub; ISBN: 081533642X;

5.3- Recommended Books

a- Samter's Immunologic Diseases 6th edition Lippincott Williams & Wilkins Publishers

b- Basic immunology: functions and disorders of the immune system / Abul K. Abbas, Andrew H. Lichtman; 2nd ed.

5.4-Periodicals, Web Sites:

Nature reviews immunology

http://www.fbr.org/swksweb/swklab.html **-**

ADVANCED CLINICAL MICROBIOLOGY2COURSE SPECIFICATION

University: Ain Shams **Faculty** of Medicine

Course specifications

Program on which the course is given: Medical Doctorate in Clinical Pathology

Major elements of program: Major

Department offering the program: Clinical Pathology Department

Department offering the course: Clinical Pathology Department

Academic year / Level: Medical Doctorate from 1st to 6th semester

Date of specification approval ……..

B- Basic Information

Course Title: Advanced Clinical Microbiology 2 Code: E7064

Credit hours: 6 Lecture: 3hr|month Total: 60

Practical: 3hr|month Total: 60

Co-ordinator

Head of Clinical Microbiology Unit

B - PROFESSIONAL INFORMATION

1- Course Aims:

a) Recognize the necessary sample specifications and precautions including patient preparation, type of sample, sample collection, sample transport, handling, ,turn-around time and rejection criteria of different types of samples.
a) Interpret and analyze result of culture.
b) Recognize appropriate diagnostic strategies for common infectious diseases.
d) Identify appropriate use of antibiotcs.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1-Recognize the pathogenesis of different infectious diseases
a2 Describe methods of laboratory diagnosis for different microorganisms
a3-Discuss the use of antibiotics in different clinical situations.
a4 – Recognise different mechanisms of antibiotic resistance.
a5-List different nosocomial infections.
a6- Identify methods of prevention of different types of infections.

Intellectual skills

By the end of the course the candidate will be able to:

b1-Choose the appropriate microbiological diagnostic tests for common infectious diseases.
b2-Analyze the microbiological results of different infections .
b3-Analyze the result of antimicrobial resistance .
b4- Discuss the serological results of different infectious diseases.
b5-Select the appropriate molecular technique for microbial diagnosis.
b6- Distinguish different methods of sterilization.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Interpret different microbiological culture results.
c2-Interpret different serological test results.
c3- Interpret different antibiotic resistance pattern.
c4- Understand application of different molecular techniques.
c5-Integrate different clinical and laboratory findings for proper interpretation of different laboratory results.
c6- Apply various methods of sterilization.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1- Formulate an appropriate diagnostic strategy for common infectious diseases.
d2 -Adopt suitable measures for safety and infection control.

d3- Develop good working communication skills with colleagues .
d4-Develop laboratory – physician interaction to insure proper decision making .

3- Course content:

First semester: E7064a

Topics	No. of hours			
	L	T	C/P	SDL
Culture negative endocarditis	1			
Catheter related blood stream infection	2			
Urinary catheter infection	1			
Post transplantation infections	1			
Food poisoning	1			
Food poisoning	1			
Infections in children I	1			
Infections in children II	1			
Skin infections	1			
Oral infections	1			
New emerging pathogens I	1			
New emerging pathogens II	1			
Preparation of microbiology culture media			1	
Methods of media sterilization		1		
Quality control of culture media		2		
Interpretation of negative blood culture		2		
Detection of catheter related infection (CRI)		2		
Guidelines in interpretation of urine culture		2		
Post course evaluation				

Second Semester: E7064b

Topics	No. of hours			
	L	T	C/P	SDL
Mycobacterial infection	1			
Mycobacterial infection	1			
Air examination	1			
Water examination	1			
Food examination	1			
Milk examination	1			
Zoonotic diseases I	1			
Zoonotic diseases II	1			
Bioterrorism 1	1			

Bioterrorism 2	1			
Bacterial vaccines	1			
Quantitation in microbiology	1			
Methods of Isolation of MTB		2		
TB PCR		1	5	
Water examination			2	
Air examination			2	
Milk examination			1	
Revision			2	
Post course evaluation				

Third Semester: E7064c

Topics	No. of hours			
	L	T	C/P	SDL
Antibiotic prophylaxis	1			
Multidrug resistance and alternative therapy	1			
Antibiotic combination for multidrug resistant strains	1			
Phenotypic detection of antibiotic resistance	1			
Molecular approach in microbial identification	1			
Molecular approach in microbial identification & detection of antibiotic resistance genes	2			
Prevention of hospital acquired infections I (Standard precautions)	1			
Prevention of hospital acquired infections II (cleaning, disinfection, waste disposal)	1			
Sterilization and disinfection I	1			
Sterilization and disinfection II	1			
Risk management	1			
Lab management I	1			
Phenotypic detection of antibiotic resistance			2	
Standard precautions		1	1	
Additional precautions		2		
Waste management			1	
Safe injections			1	
Antiseptics and disinfection			1	
How to test a disinfectant?		1	1	

Post course evaluation				

Fourth Semester: E7064d

Topics	No. of hours			
	L	T	C/P	SDL
Viral tissue culture	1			
Viral vaccine	1			
Sexually transmitted viral disease	1			
AIDS	1			
Oncogenic viruses	1			
Oncogenic viruses	1			
GIT viral infections	1			
Ocular Viruses	1			
Viral heamorragic fever I	1			
Viral heamorragic fever II	1			
CNS viruses , Rabies virus, Parvo virus	1			
Diagnosis of EBV		2		
Discussion on (EBV)		2		
Diagnosis of HBV		2		
Diagnosis of HCV		2		
Discussion on (HBV & HCV)		2		
Diagnosis of HIV		2		
Post course evaluation				

Fifth semester: E7064e

Topics	No. of hours			
	L	T	C/P	SDL
Nosocomial fungal infections I	1			
Systemic mycosis	1			
Fungal eye infections	1			
Mycotoxins	1			
Clinical presentation of parasitic diseases	1			
Diagnosis of parasitic diseases	1			
Diagnosis of parasitic diseases	1			
Protozoa	1			
Protozoa	1			
Helminthes	1			
Helminthes	1			
Arthropods	1			

Lab isolation of fungi (Media and Stains)		2		
Methods of yeast identification		2		
Discussion on fungal diagnosis		2		
Diagnosis of protozoa in clinical specimens		2		
Diagnosis of helminthes in clinical specimens		2		
Clinical cases in parasitology		2		
Post course evaluation				

L: Lecture, T: Tutorial, C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

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Weighing of Assessments:

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Total	380

5 - List of References

5.1- Course Notes (paper and / or electronic)
5.2- Essential Books (Text Books)
1- Murray Textbook of Manual of Clinical Micorobiology, Ninth Edition 2007
2- Baily & Scott's Diagnostic Microbiology, Twelvth Edition, 2007
5.3- Recommended Books
Koneman's color atlas and text book of diagnostic microbiology
5.4- Periodicals, Web Sites, etc
medline.com, cp ainshams.com
Journals: Journal of Clinical microbiology (available in the library of Ain Shams Specialized Hospital)

V- GENERAL INFORMATION

1 - MONITORING OF TRAINING AND SUBMISSION OF TRAINING REPORTS

You must keep proper and updated records in your logbook to reflect the activities encountered in your training. Your logbook must be duly endorsed by an authorized signatory at the end of each semester.

You will be continuously assessed by your supervisors, in consultation with head of department. An assessment will be submitted within 2 weeks of completion of each semester.

2 - MISCELLANEOUS INFORMATION:

INJURY AND/OR BLOOD OR BODY FLUID EXPOSURE:

During regular working hours, you should immediately report an exposure incident to infection control unit. If exposure occurs after regular working hours or during a weekend or holiday; please call the emergency department. For injury, please report to the Emergency Department.

Please also be sure to inform the supervisors of an exposure incident and/or injury.

3 - ACTION ON COMPLETION OF CLINICAL TRAINING

Once all training sessions are completed the log book should be signed by the senior supervisor and the head of the department and then should be submitted to post graduate Secretariat.

4- REFERENCE

The Training Guide is available at the post graduate Secretariat and could be downloaded from the following website

VI – YOUR LOG BOOK

1- Introduction

The aim of this book is to give you a guide to the expectations for each item. It will be a guide for both you and your teachers to what you should be seeing and doing.

It will give you a list of the important topics that you should think about and should be covered in:

1. Practical sessions

or

2. Assignments

or

3. Self-directed learning (SDL)

For each item there is also a list of

1. Practical sessions to be seen or attended
2. Practical procedures to be seen and done
3. Assignments to be completed

Remember

This document is *only a guide*. It is not an exhaustive list. It is not just a checklist to score points. It is a guide to encourage you to read and learn more. *This book is for your benefit*. It will form a record of your clinical training and experience.

2 - Supervisors

Staff of the clinical pathology department.

3**–Tables for Training Records**

Candidates are required to fulfill 75% of the listed activities in order to be eligible for the exam entry. The minimum number required for each activity = 75%. You are free to attend more and record your extra attendance.

WEEKLY department PLAN of Clinical Chemistry

	Saturday	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
Scientific Meeting					9am-11am	
Lecture Advanced Chem.1,2			9-12am			
Practical Advanced Chem1,2			12-15pm			

WEEKLY department PLAN of Laboratory Hematology

	Saturday	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
Scientific meeting					9am-11am	
Lecture hematology1 and 2)						9-12 a.m
Practical hematology 1 and 2)						12-3 p.m.

WEEKLY department PLAN of Clinical Immunology

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thurs.
Journal club					10-12am	
Scientific Meeting					12am-2pm	
Lecture CP7003 (hall2) E7063 (hall3)		9-12am				
Practical CP7003 (lab2) E7063(lab3)		9-12 pm				

WEEKLY department PLAN of Clinical Microbiology

	Saturday	Sunday	Monday	Tuesday	Wednesday	Thurs.
Scientific Meeting					9am-11am	
Lecture CP7004 (hall2) E7064 (hall3)				9-12		
Practical CP7004 (lab2) E7064(lab3)				9-12		

Conference attendance
(NB. Minimum number required is 4)

No	Date	Place	Topics	Supervisor signature
1				
2				
3				
4				

Thesis attendance
(NB. Minimum number required is 10)

No	Date	Place	Name of the thesis	Supervisor signature
1				

2				
3				
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Case presentations
(NB. Minimum number required is 20)

No	Date	Place	Diagnosis	Supervisor signature
1				
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Review Article
(NB. Minimum number required is 20)

No	Date	Place	Name of the article	Supervisor

				signature
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Journal Club
(NB. Minimum number required is 20)

No	Date	Place	Topic	Supervisor signature
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20				

Practical skills (Agreement Scale)

Advanced Clinical chemistry1: CP7001

First semester:

End-point assays:

(NB. Minimum number required is 32)

No	Date	Place	Analyte	Supervisor signature
1				
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31				
32				

Acid preparation:
(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Standard preparation:
(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
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7				
8				

Second Semester:

End-point assays (special fluids):
(NB. Minimum number required is 32)

No	Date	Place	Analyte	Supervisor signature
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32				

Kinetic assays:
(NB. Minimum number required is 32)

No	Date	Place	Analyte	Supervisor signature
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30				
31				
32				

Third Semester:

Automation:

(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Kinetic assays:
(NB. Minimum number required is 32)

No	Date	Place	Analyte	Supervisor signature
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32				

Fourth Semester:

Urine analysis:
(NB. Minimum number required is 32)

No	**Date**	**Place**	**performance**	**Supervisor signature**
1				
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31				
32				

Fifth Semester:

Semen and stone analysis:
(NB. Minimum number required is 4)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				

Electrophoresis comment:
(NB. Minimum number required is 4)

No	Date	Place	diagnosis	Supervisor signature
1				
2				
3				
4				

Electrophoresis spotting:
(NB. Minimum number required is 20 semester.)

No	Date	Place	Diagnosis	Supervisor signature

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18				
19				
20				

AP=ASSISTED PERFORMANCE
IP=INDEPENDENT PERFORMANCE
O=OBSERVATION
P=POOR S= Satisfactory E= Excellent GOOD

Advanced laboratory hematology 1:
First semester:
Hb curve construction and Hb estimation:
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Manual WBCs and platelet count
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Differential WBCs
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Reticulocytic count and preparation
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Second semester:

Direct and Indirect Coombs' test
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature

1				
2				
3				

Hb electrophoresis
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Special stain
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Blood transfusion technique
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature

1				
2				
3				

Third Semester:

FCM

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Bone marrow techniques & examination

(NB. Minimum number required is 10)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Fourth semester

Cytogenetic & molecular techniques

(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

4				
5				
6				
7				
8				

Platelet function test & coagulometric assays
(NB. Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

Fifth semester:

Automation & Quality control
(NB. Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

AP=ASSISTED PERFORMANCE
IP=INDEPENDENT PERFORMANCE

O=OBSERVATION
P=POOR S= Satisfactory E= Excellent GOOD

Practical skills (Agreement Scale)
Advanced Clinical Immunology1
How to make an Elisa kit
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Troubleshooting an Elisa kit
(NB. Minimum number required is 10)

No	Date	Place	Performance	Supervisor signature
1				
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10				

HLA TYPING (microctotoxicity)
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Complement function (CH50)
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				

2				
3				

DNA extraction

(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

RNA Extraction

(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Complimentary DNA

(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Master Mix

(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Immuno Blotting

(NB. Minimum number required is 1)

No	Date	Place	Performance	Supervisor signature
1				

Lymphocyte separation

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor

				signature
1				
2				
3				
4				
5				

Cell Storage
(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

AUTOANTIBODIES (ANA ,ASM,AMA,APA.& LKM)
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

AUTOANTIBODIES (ANTI-DNA)
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

AUTOANTIBODIES (ANTITHYROID)
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature

1				
2				
3				
4				

AUTOANTIBODIES (ANTI-islet cell antibodies)
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

AUTOANTIBODIES (ANTI-glomerular basement membrane antibodies)
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

Automated immunoassay systems
(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Phagocytosis ASSAY
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				

3				
4				

AP=ASSISTED PERFORMANCE
IP=INDEPENDENT PERFORMANCE
O=OBSERVATION

Practical skills (Agreement Scale)
Advanced clinical microbiology 1
First Semester:

Staining techniques
(Minimum number required is 6)

No	Date	Place	Name of the topic	Supervisor signature

Biochemical reaction
(Minimum number required is 6)

No	Date	Place	Name of the topic	Supervisor signature

Antibiotic sensitivity
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Serological tests
(Minimum number required is 6)

No	Date	Place	Name of the topic	Supervisor signature
1				
2				
3				
4				
5				
6				

Second Semester:

Urine examination
(Minimum number required is6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Stool examination
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

4				
5				
6				

Genital specimen examination
(Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Blood culture examination
(Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Body fluids examination
(Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Pus and wound examination
(Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature

1				
2				
3				
4				
5				
6				
7				

Respiratory specimen examination
(Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Third Semester:

Interpretation of result of quality control
(Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Examination of mycological specimens
(Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature

1				
2				
3				

Fourth semester:

Serological tests
(Minimum number required is 6)

No	Date	Place	Name of the topic	Supervisor signature
1				
2				
3				
4				
5				
6				

Antibiotic sensitivity
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Helminthic examination
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Fifth Semester:

Isolation and identification of yeast
(Minumum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Isolation and identification of moulds
(Minumum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Scotch tap preparation
(Minumum numberr required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Interpretation of widal test
(Minumum number required is 3)

No	Date	Place	Performance	Supervisor

				signature
1				
2				
3				

Interpretation of brucella test
(Minumum numberr required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Advanced clinical chemistry2:
First Semester:

Glycated haemoglobin
(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

VMA assay
(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

5				
6				
7				
8				

Second Semester:

Electrophoresis

(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Third Semester:

HPLC

(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

Automation

(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				

2				
3				
4				
5				
6				
7				
8				

Fourth semester:

Kit evaluation
(NB. Minimum number required is 2)

No	Date	Place	Performance	Supervisor signature
1				
2				

EQAS
(NB. Minimum number required is 2)

No	Date	Place	Performance	Supervisor signature
1				
2				

Fifth Semester:

Inventory
(NB. Minimum number required is 2)

No	Date	Place	Performance	Supervisor signature
1				
2				

TAT
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

Immuno-chemical autoanalyzer
(NB. Minimum number required is 4)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

AP=ASSISTED PERFORMANCE
IP=INDEPENDENT PERFORMANCE
O=OBSERVATION
P=POOR S= Satisfactory E= Excellent GOOD

Practical Skills (Advanced laboratory hematology 2):
First semester:

Hb electrophoresis
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				

3				
4				
5				
6				

HPLC of Hb
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

IEF of Hb
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Second semester:

Special stain
(NB. Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Blood transfusion technique
(NB. Minimum number required is 3)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				

Third Semester:

FCM

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Bone marrow techniques & examination

(NB. Minimum number required is 10)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Fourth semester:

Cytogenetic & molecular techniques

(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Platelet function test & coagulometric assays
(NB. Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

Fifth semester:

Automation & Quality control
(NB. Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

Bone marrow histopathology
(NB. Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

AP=ASSISTED PERFORMANCE
IP=INDEPENDENT PERFORMANCE
O=OBSERVATION
P=POOR S= Satisfactory E= Excellent GOOD

Practical skills (Advanced clinical Immunology 2):

Preparation of Elisa (Determination of Ag. conc)
(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Preparation of Elisa (Determination of Ab conc)
(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Preparation of Elisa (Coating of wells)

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Preparation of Elisa (Calibration of Reader)

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Preparation of Elisa (Verification of the technique)

(NB. Minimum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

DNA extraction

(NB. Minimum number required is10)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

HLA typing by DNA techniques
(NB. Minimum number required is 20)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

RNA extraction
(NB. Minimum number required is10)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Agarose gel electrophoresis
(NB. Minimum number required is10)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Polymerase chain reaction
(NB. Minimum number required is 20)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
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7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Lymphocyte separation
(NB. Minimum number required is 10)

No	Date	Place	performance	Supervisor

				signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Tissue culture / aseptic technique
(NB. Minimum number required is10)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Viability assays
(NB. Minimum number required is10)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Flow cytometry

(NB. Minimum number required is 10)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Immunoelectrophoresis/Immunofixation
(NB. Minimum number required is 15)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Lymphocyte Proliferation Assays
(NB. Minimum number required is 2)

No	Date	Place	performance	Supervisor signature
1				
2				

Practical skills (Advanced clinical microbiology 2):
First Semester:

Staining techniques
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature

Biochemical reaction
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature

Antibiotic sensitivity
(Minimum number required is 6)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				

5				
6				

Serological tests
(Minimum number required is 6)

No	Date	Place	Name of the topic	Supervisor signature
1				
2				
3				
4				
5				
6				

Second Semester:

Urine examination
(Minimum number required is 6)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Stool examination
(Minimum number required is 6)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				

6				

Genital specimen examination
(Minimum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Blood culture examination
(Minimum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Body fluids examination
(Minimum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Pus and wound examination
(Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				

2				
3				
4				
5				
6				
7				

Respiratory specimen examination
(Minimum number required is 8)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				
8				

Third Semester:

Interpretation of result of quality control
(Minimum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Examination of mycological specimens
(Minimum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				

3				

Fourth semester:

Microbiology-preperation of media
(Minimum number required is 7)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

Sterilization and autoclaving
(Minimum number required is 7)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				
7				

Water examination
(Minimum number required is 4)

No	Date	Place	performance	Supervisor signature

1				
2				
3				
4				

Antibiotic sensitivity
(Minimum number required is 6)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Fifth Semester:

Isolation and identification of yeast
(Minumum number required is 6)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				
6				

Isolation and identification of moulds
(Minumum number required is 6)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				

5				

Scotch tap preparation
(Minumum numberr required is 3

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Interpretation of widal test
(Minumum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Interpretation of brucella test
(Minumum number required is 3)

No	Date	Place	performance	Supervisor signature
1				
2				
3				

Nucleic acid extraction
(Minumum number required is 5)

No	Date	Place	performance	Supervisor signature
1				
2				
3				
4				
5				

PCR CMV &TB
(Minumum number required is 5)

No	Date	Place	Performance	Supervisor signature
1				
2				
3				
4				
5				

Assignments (Advanced clinical chemistry1)
(NB. Minimum number required is 25)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			SOP (end point)(1)	
2			MCQs analytes(20)	
3			Chemistry cases (5)	
4			Quality control charts (5)	
5			MCQs basic (20)	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			SOP (kinetic) (1)	
2			Urine reports (5)	
3			Chemistry cases (5)	
4			Quality control charts (5)	
5			Calculations (5)	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Automation (1)	
2			MCQs enzymes (20)	
3			Chemistry cases (5)	
4			Quality control charts (5)	
5			Statistics (5)	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			SOP endocrine (1)	
2			Semen reports(5)	
3			Endocrine cases (5)	
4			Quality control charts (5)	
5			MCQs miscellaneous (20)	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			MCQs enzymes (20)	
2			MCQs analytes (20)	
3			Endocrine cases (5)	
4			Quality control charts (5)	
5			Electrophoresis comment (5)	

Assignments (Advanced Laboratory Hematology 1)
(NB. Minimum number required is 10)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Deficiency anemias	
2			Hemolytic anemias	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			Benign WBCs disorders	
2			Special stains	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Hb electrophoresis	
2			FCM	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			Case reports of leukemias	
2			Case reports of coagulation	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			Automation	
2			How to evaluate a coagulation kit	

Assignments (Advanced Clinical Immunology 1)
(NB. Minimum number required is 19)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			SOP Elisa(5)	
2			Elisa curves (5)	
3			Quality control (5)	
4			HLA Iheritance (10)	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			CDNA (5)	
2			DNA (5)	
3			RNA (5)	
4			Quality control (5)	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Westen Blotting(5)	
2			Transplantation problems (10)	
3			RIBA (5)	
4			Quality control charts (5)	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			SOP PCR (1)	
2			Immunedeficiency reports(5)	
3			RHEUMATOLOGY reports (5)	
4			Quality control charts (5)	
5			MCQs miscellaneous (10)	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			IMMUNOFIXATION (20)	
2			STATISTICS (5)	

Assignments (advanced clinical chemistry2)
(NB. Minimum number required is 25)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			SOP (Glycated)(1)	
2			Urine cases (5)	
3			Chemistry cases (5)	
4			Quality control charts (5)	
5			Calculations (5)	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			SOP (VMA) (1)	
2			Electrophoresis comment (5)	
3			Electrophoresis MCQs (10)	
4			Safety (1)	
5			Quality control charts (5)	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Automation (1)	
2			HPLC reports (5)	
3			Chemistry cases (5)	
4			User defined sheet (1)	
5			Statistics (5)	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			Advanced statistics (5)	
2			Evaluation (1)	
3			Endocrine cases (5)	
4			EQAS charts (5)	
5			MCQs miscellaneous (20)	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			MCQs HPLC (20)	
2			MCQs automation (20)	
3			Inventory problems (5)	
4			EQAS charts (5)	
5			EQAS problems (5)	

Assignments (Advanced laboratory hematology 2)
(NB. Minimum number required is10)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Deficiency anemias	
2			Hemolytic anemias	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			Benign WBCs disorders	
2			Special stains	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Hb electrophoresis	
2			FCM	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			Case reports of leukemias	
2			Case reports of coagulation	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			Automation	
2			How to evaluate a coagulation kit	

Assignments (Advanced Clinical Immunology 2)
(NB. Minimum number required is 15)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			SOP HLA(5)	
2			Elisa curves (5)	
3			Statistics (5)	
4			Genetics (10)	

SECOND SEMESTER

No	Date	Score	Topic	Supervisor

				signature
1			Cytokines MCQ (5)	
2			DNA (5)	
3			RNA (5)	
4			Quality control (5)	

THIRD SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Treatment Cases (10)	
2			FLOW Problems (10)	
3			MCQ (5)	

FOURTH SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Hepatitis Reports(10)	
2			Laboratory Investigations In Clinical Immunology. (15)	

FIFTH SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Mcq(20)	
2			Statistics (5)	

Assignments (Advanced clinical microbiology 1)
(NB. Minimum number required is10)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Upper & lower respiratory tract specimens	
2			Stool examination	

Second Semester

No	Date	Score	Topic	Supervisor signature

1			Genital tract specimens examination	
2			CSF & body fluids examination	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Antibiotic resistance	
2			Quality control of media & stains	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			Viral diagnosis (ELIZA)	
2			PCR in viral diagnosis	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			Diagnosis of fungal infections	
2			Diagnosis of parasitic infections	

Assignment include: Cases, MCQs, True or False, interpretation & comments

Assignments (Advanced clinical microbiology 2)
(NB. Minimum number required is10)
FIRST SEMESTER

No	Date	Score	Topic	Supervisor signature
1			Negative blood culture	
2			Urine examination	

Second Semester

No	Date	Score	Topic	Supervisor signature
1			Quantitation in microbiology	
2			Water examination	

Third Semester

No	Date	Score	Topic	Supervisor signature
1			Antibiotic combination	
2			Phenotypic detection of antibiotic resistance	

Fourth Semester

No	Date	Score	Topic	Supervisor signature
1			EBV diagnosis	
2			Hepatitis viruses (HBV, HCV)	

Fifth Semester

No	Date	Score	Topic	Supervisor signature
1			Diagnosis of fungi	
2			Diagnosis of parasites	

Assignment include: Cases, MCQs, True or False, interpretation & comments

5 - Log book preview

The candidate logbook will be reviewed and skills performed summarized by diagnosis groups during the semester evaluation and at the end of the course in the table below.The results of this review will be totaled in the summary chart below.

Summary

Semester	1st	2nd	3rd	4th	5th	6th	Total
Activity	No	No	No	No	No	No	
Conference attendance							
Thesis attendance							
Case presentation							
Journal club							
Review article							
Practical skills (advanced clinical chemistry1):							
End-point assay							
Acid preparation							
Standard preparation							
End-point assay(special)							
Kinetic assays							
Automation							
Kinetic assay							
Urine analysis							
Semen and stone analysis							
Electrophoresis comment							
Practical skills (advanced clinical hematology1):							
Hb electrophoresis							
HPLC of Hb							
IEF of Hb							
Special stain							
Transfusion medicine							
FCM							
Bone marrow technique and examination							
Cytogenetics & molecular techniques							
Platelet function and coagulometric techniques							
Automation &QC							
Histopathology							
Practical skills (advanced clinical immunology1):							
How to make an elisa kit							
Troubleshooting an ELISA kit							
HLA typing (microctotoxicity)							

Complement function (ch50)							
DNA extraction							
RNA extraction							
Complimentary DNA							
Master mix							
Immuno blotting							
Lymphocyte separation							
Cell storage							
Autoantibodies (ANA ,ASM,AMA,APA.& LKM)							
Autoantibodies (ANTI-DNA)							
Autoantibodies (antithyroid)							
Autoantibodies (anti-islet cell antibodies)							
Autoantibodies (anti-glomerular basement membrane							
Automated immunoassay systems							
Phagocytosis assay							
Practical skills (advanced clinical microbiology1):							
Staining techniques							
Biochemical reaction							
Culture media							
Antibiotic sensitivity							
Serelogical tests							
Urine examination							
Stool examination							
Genital specimens examination							
Blood culture examination							
Body fluids exam.							
Pus &wound exam.							
Respiratory specimens exam.							
Interpretation of quality control result							
Preparation of media							
Sterilization and autoclaving							
Water examination							
Isolation of yeast							
Isolation of moulds							
Scotch tap preparation							
Interpretation of widal test							

Interpretation of brucella test							
Nucleic acid extraction							
PCR TB CMV							
Practical skills (advanced clinical chemistry2):							
Glycated haemoglobin							
VMA assay							
Electrophoresis							
HPLC							
Automation							
Kit evaluation							
EQAS							
Inventory							
TAT							
Immuno-chemical autoanalyzer							
Practical skills (advanced clinical hematology2):							
Hb curve construction and Hb estimation							
Manual WBC and Platelet count							
Differential WBC							
Reticulocytic count & preparation							
Direct & Indirect Coombs' test							
Hb electrophoresis							
Special stain							
Transfusion medicine							
FCM							
Bone marrow technique and examination							
Cytogenetics & molecular techniques							
Platelet function and coagulometric techniques							
Automation &QC							
Histopathology							
Practical skills (advanced clinical immunology2):							
Preparation of Elisa (Determination of ag conc)							
Preparation of Elisa (Determination of Ab conc)							

Preparation of Elisa (Coating of wells)							
Preparation of Elisa(Calibration of Reader)							
Preparation of Elisa Verification of the technique							
DNA extraction							
HLA typing by DNA techniques							
RNA extraction							
Agarose gel electrophoresis							
PCR							
Lymphocyte separation							
Tissue culture / aseptic technique							
Viability assays							
Flow cytometry							
Immunoelectrophoresis/Immunofixation							
Lymphocyte Proliferation Assays							
Practical skills (advanced clinical microbiology2):							
Staining techniques							
Biochemical reaction							
Culture media							
Antibiotic sensitivity							
Serelogical tests							
Urine examination							
Stool examination							
Genital specimens examination							
Blood culture examination							
Body fluids exam.							
Pus &wound exam.							
Respiratory specimens exam.							
Interpretation of quality control result							
Preparation of media							
Sterilization and autoclaving							
Water examination							
Isolation of yeast							
Isolation of moulds							
Scotch tap preparation							
Interpretation of widal test							
Interpretation of brucella test							
Nucleic acid extraction							

PCR TB CMV							
Assignments(advanced clinical chemistry1)							
Assignments(advanced clinical hematology1)							
Assignments(advanced clinical immunology1)							
Assignments(advanced clinical chemistry2)							
Assignments(advanced clinical hematology2)							
Assignments(advanced clinical immunology2)							

VII - HEAD OF DEPARTMENT APPROVAL FOR THE EXAM ENTRY

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيد لدرجة (ماجسيتر / الدكتوراة)
بقسم /

تقرير السادة الاساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة	بدأ ☐	قطع شوطا محدودا ☐
	أوشك على الإنتهاء ☐	إنتهى من الجمع ☐
الجزء العملى	بدأ ☐	قطع شوطا محددا ☐
	أوشك على الإنتهاء ☐	إنتهى من التحليل ☐
مناقشة النتائج	بدأ ☐	قطع شوطا محدودا ☐
	أوشك على الإنتهاء ☐	إنتهى من التحرير ☐
المراجعة النهائية مع المشرف	بدأ ☐	قطع شوطا محددا ☐
	أوشك على الإنتهاء ☐	إنتهت تماما ☐

رأى السادة المشرفون

إستمرار قيد الطالب ☐ مد القيد ☐

شطب قيد الطالب ☐

تم تشكيل لجنة المناقشة نعم / لا تاريخ التشكيل / /

مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
القيد لدرجة (ماجسيتر / الدكتوراة)
بقسم /

تقرير السادة الاساتذة المشرفون

جمع المادة العلمية	بدأ ☐	قطع شوطا محدودا ☐
و كتابة المقدمة	أوشك على الإنتهاء ☐	إنتهى من الجمع ☐
الجزء العملى	بدأ ☐	قطع شوطا محددا ☐
	أوشك على الإنتهاء ☐	إنتهى من التحليل ☐
مناقشة النتائج	بدأ ☐	قطع شوطا محدودا ☐
	أوشك على الإنتهاء ☐	إنتهى من التحرير ☐
المراجعة النهائية مع المشرف	بدأ ☐	قطع شوطا محددا ☐
	أوشك على الإنتهاء ☐	إنتهت تماما ☐

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شطب قيد الطالب ☐

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مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
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تقرير السادة الاساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من الجمع ☐

الجزء العملى: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهى من التحليل ☐

مناقشة النتائج: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من التحرير ☐

المراجعة النهائية مع المشرف: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهت تماما ☐

رأى السادة المشرفون

إستمرار قيد الطالب ☐ مد القيد ☐

شطب قيد الطالب ☐

تم تشكيل لجنة المناقشة نعم لا تاريخ التشكيل / /

مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
عن الطالب /
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تقرير السادة الاساتذة المشرفون

جمع المادة العلمية و كتابة المقدمة: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من الجمع ☐

الجزء العملى: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهى من التحليل ☐

مناقشة النتائج: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من التحرير ☐

المراجعة النهائية مع المشرف: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهت تماما ☐

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VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
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جمع المادة العلمية و كتابة المقدمة: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من الجمع ☐

الجزء العملى: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهى من التحليل ☐

مناقشة النتائج: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من التحرير ☐

المراجعة النهائية مع المشرف: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محددا ☐ إنتهت تماما ☐

رأى السادة المشرفون

إستمرار قيد الطالب ☐ مد القيد ☐

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تم تشكيل لجنة المناقشة نعم لا تاريخ التشكيل / /

مد / شطب القيد

VIII – THESIS FOLLOW UP

التقرير النصف السنوى لعام /
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جمع المادة العلمية و كتابة المقدمة: بدأ ☐ أوشك على الإنتهاء ☐ قطع شوطا محدودا ☐ إنتهى من الجمع ☐

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رأى السادة المشرفون

إستمرار قيد الطالب ☐ مد القيد ☐

VIII – EVALUATION FORMS

To be completed at ----------
Candidate
Supervisor
Location

Aim of training

_____
_____
_____

Agreed educational objectives and timescale in which objectives should be achieved.

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Comments by Candidate

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Comments by Supervisor

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Date of next meeting

Signed by candidate

Signed by Supervisor

Date

VIII – EVALUATION FORMS

To be completed at ----------
Candidate
Supervisor
Location

Aim of training

_____
_____
_____

Agreed educational objectives and timescale in which objectives should be achieved.

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Location

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Comments by Candidate

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Comments by Supervisor

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_____

Date of next meeting

Signed by candidate

Signed by Supervisor

Date

Degree Program Evaluation Form By The Candidate
To be completed at the end of your degree.

Please consider each pair of statements and decide which most clearly reflects your view and **tick one box or answer the question**.

I. Individual Information

1. Are you a graduate of ASU?

yes no to some degree

2. Year and semester when studies began:

II. General Questions

1. What are the advantages/disadvantages of the general study environment at the University ASU?

2. What were your expectations when you applied to the degree?

3. Do you feel that the degree program prepares you well for your future studies or employment according to the demands and expectations of those institutions?

yes no to some degree

4. Has the time limit of the program (two or three academic years) caused you any difficulties or inconveniences?

yes no to some degree

III. Structure of Degree Program

1. Did you receive enough guidance in planning your study schedule in the beginning of the program?

yes no to some degree

2. What were the main difficulties in the planning of your study schedule?

3. What is your general opinion on the structure of the degree program?

4. In your opinion, does the degree program offer a good balance of lectures, seminars, conferences, and book exams?

yes no to some degree

a) General Studies

i) Do you feel that you have received enough guidance on academic writing?

yes no to some degree

ii) Do you feel that you have acquired sufficient knowledge on research skills (eg. quantitative and qualitative research methods)?

yes no to some degree

b) Courses

i) Have you had some special difficulties in completing some of the courses? Please specify.

ii) Has there been a sufficient variety of courses offered for your optional studies?

yes no to some degree

iii) Have you received enough guidance for the preparation of your thesis?

yes no to some degree

IV. Concluding Points

1. Did the degree program meet your expectations?

yes no to some degree

2. What aspects of the degree program do you particularly like?

3. What aspects of the degree program do you particularly dislike?

4. What are your suggestions on how to improve the program?

Thank you!