MEDICAL DOCTORATE (M.D.) DEGREE PROGRAM AND COURSES SPECIFICATIONS FOR CLINICAL

Haematology

(According to currently applied Credit points by laws)

Department of Internal Medicine

Faculty of Medicine

Assiut University

2016-2017

Contents

Medical Doctorate(M.D.) degree of Clinical haematology

A. Basic Information

- **Program Title:** Medicine Doctorate degree of Clinical haematology
- **Nature of the program: Single.**
- **Responsible Department:** Department of Clinical haematology - Faculty of Medicine- Assiut University.
- **Program Academic Director (Head of the Department)**
- Pr. Dr Lubna Eltony
- **Coordinator (s):**
  - **Principle coordinator: Prof.Esam A. S.ElBeih**
  - **Assistant coordinator (s) Prof. Dr. Youseryia A. Ahmad**
  - **Prof. Osama A. Ibrahim**
  - **Prof. Howaida Nafadiy**
  - **Dr.Aadel H. Mekkawi**
  - **Dr.Mohammad Ramadan**
  - **& Dr. Ahmad F. Thabet**
  - **DR.Rania Hafez**
  - **Dr. Safenaz Husein**
- **Internal evaluators: Prof. Dr. Enas A. Alkareemi& Prof. Dr. Mohammad A. Sobh (Assiut Univ.).**
- **External evaluators: Prof. Dr. Mohammad A. Mosa (Ain Shams Univ.)& Omar A. Fahmi (Cairo Univ.).**
- **Date last reviewed: 23 / 9 / 2014**
- **Date of Approval by the Faculty of Medicine Council of Assiut University: 20/2 / 2017**
- **Total number of courses:** 7 courses (First part 6 courses Second part 1 course + 2 elective courses

B. Professional Information

1- Program aims

1/1 To enable candidates to master high level of patients care by teaching high level of clinical skills, bedside care skills in clinical haematology. In addition to update their basic medical knowledge in other clinical specialties gastroenterology, rheumatology, endocrine, chest, neurology and intensive care medicine.

1/2. Provide specialists with fundamental knowledge dealing with immune-compromised and critically ill patients, ICU equipments, techniques, indications, contraindications and training skills of different intensive care techniques.

1/3 To enable candidates to be in continuously changing medical and haematological guidelines for diagnosis and treatment.

1/4 To introduce candidates to the basics and advances of scientific medical research to understand in details and get the best of published scientific research and do their own.

1.5. To enable candidates to have professional careers as a consultant in Egypt and recognized abroad.

1/6.To enable candidates to pursue higher studies and subspecialties.

1.7.To enable candidates to be in continuously changing medical and haematological guidelines for diagnosis and treatment.

2- Intended learning outcomes (ILOs) ***for the whole program***:

2/1. Knowledge and understanding:

A. Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio – behavioral science relevant to clinical haematology as well as the evidence – based application of this knowledge to patient care.

B. Explain basics, methodology, tools and ethics of scientific medical, clinical research.

C. Mention ethical, medico logical principles and bylaws relevant to his practice in the field of clinical haematology.

D. Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of clinical haematology.

E. Mention health care system, public health and health policy, issues relevant to this specialty and principles and methods of system – based improvement of patient care in common health problems of the field of clinical haematology

2/2 Intellectual outcomes:

A. Apply the basic and clinically supportive sciences which are appropriate to clinical haematology.

B. Demonstrate an investigatory and analytic thinking "problem – solving "approaches to clinical situation related to Clinical haematology.

C. Plan research projects.

D. Write scientific papers.

E. Participate in clinical risk management as a part of clinical governance .

F. Plan for quality improvement in the field of medical education and clinical practice in clinical haematology.

G. Create / innovate plans, systems, and other issues for improvement of performance in his practice related to clinical haematology.

H. Present and defend his / her data in front of a panel of experts.

I. Formulate management plans and alternative decisions in different situations in the field of the clinical haematology.

2/3 Skills:

2/3/1 Practical and professional skills (Patient Care)

A. Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

p.s. Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.

B. Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to clinical haematology.

C. Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.

D. Perform diagnostic and therapeutic procedures considered essential in the field of clinical haematology.

E. Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.

F. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in clinical haematology related situations.

G, Gather essential and accurate information about patients of clinical haematology related conditions.

H. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for clinical haematology related conditions.

I. Develop and carry out patient management plans for clinical haematology related conditions.

J. Counsel and educate patients and their families about clinical haematology related conditions.

K. Use information technology to support patient care decisions and patient education in all clinical haematology related clinical situations.

L. Perform competently all medical and invasive procedures considered essential for clinical haematology related conditions / area of practices.

M. Provide health care services aimed at preventing clinical haematology related health problems.

N. Lead health care professionals, including those from other disciplines, to provide patient-focused care in clinical haematology related conditions.

O.Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets (Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)

2/3/2 General skills

Including:

- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-based Practice

Practice-Based Learning and Improvement

A. Demonstrate continuous evaluation of different types of care provision to patients in the different area of clinical haematology
B. Appraise scientific evidence.
C. Continuously improve patient care based on constant self-evaluation and life-long learning.
D. Participate in clinical audit and research projects.
E. Practice skills of evidence-based Medicine (EBM).
F. Educate and evaluate students, residents and other health professionals.
G. Design logbooks.
H. Design clinical guidelines and standard protocols of management.
I. Appraise evidence from scientific studies related to the patients' health problems.
J. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
K. Use information technology to manage information, access on-line medical information; for the important topics.

Interpersonal and Communication Skills

Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including:-

- Present a case.
- Write a consultation note.
- Inform patients of a diagnosis and therapeutic plan completing and maintaining comprehensive.
- Timely and legible medical records.
- Teamwork skills.

M. Create and sustain a therapeutic and ethically sound relationship with patients.

N. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.

O. Work effectively with others as a member or leader of a health care team or other professional group.

Professionalism

P. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.

Q. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.

R. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Systems-Based Practice

S. Work effectively in health care delivery settings and systems related to clinical haematology including good administrative and time management.

T. Practice cost-effective health care and resource allocation that does not compromise quality of care.

U. Advocate for quality patient care and assist patients in dealing with system complexities.

V. Design, monitor and evaluate specification of under and post graduate course and programs.

W. Act as a chair man for scientific meetings including time management.

3- Program Academic Reference Standards (ARS) (Annex 2)

Academic standards for Medical Doctorate (MD) degree in Clinical haematology

Assiut Faculty of Medicine developed MD degree programs' academic standards for different clinical specialties.

In preparing these standards, the General Academic Reference Standards for post graduate programs (GARS) were adopted. These standards set out the graduate attributes and academic characteristics that are expected to be achieved by the end of the program.These standards were approved by the faculty council on 3/2010.

4- Program External References (Benchmarks)

1. The training programs is similar to that approved by Royal Colleges of Physicians Training Board (MAY 2007) regulations. Joint Royal Colleges of Physicians Training Board (MAY 2007)
(http://www.gmc/uk.org/Haematology_3_Jul_07_v.Curr_0017.pdf_30541824).

2. ACGME (Accreditation Council for Graduate Medical Education(
http://www.acgme.org/acWebsite/navPages/nav_Public.asp

Item	clinical haematology Diseases program	Royal Colleges of Physicians Training Board (MAY 2007) clinical haematology Fellowship Program
Goals	Matched	Matched
ILOS	Matched	Matched
Duration	4 -6 years	3 years
Requirement	different	Different
Program structure	different	Different

5- Program Structure

A. Duration of program: **4-6 years**
B. Structure of the program:
Total number of credit point = 420 CP
Master degree: 180 credit point
Didactic #: 37 (23.1%), practical 123 (76.9%), total 160 CP
Thesis and researches: 80 CP (33.3%)

First part
Didactic 10 CP (100 %), practical 0(0 %).total 10 CP
Second part
Didactic 24 , (16.3 %) practical 123 (83.7 %) total 147
According the currently applied bylaws:
Total courses:160 credit point
Compulsory courses: 157 credit point (98.1%)
Elective courses: 3 credit point (1.9%)

	Credit points	% from total
Basic courses	10	4.1%
Humanity and social courses	3	1.2%
Specialized courses	147	61.3%
Others (Computer, …)		0
Field training	123	51.3%
Thesis	40	16.7%
2 published researches	40	16.7%

C- Program Time Table

Duration of program 4 years (could be extended at maximum to 6 years) divided into

- Part 1

Program-related essential courses
- Medical statistic
- Research methodology
- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Students are allowed to sit the exams of these courses after 6 months from applying to the M D degree.
Students are allowed to sit the exams of the remaining essential courses after 12 months from applying to the MD degree.

- Thesis and 2 published researches

For the M D thesis;
MD thesis subject should be officially registered within 1 year from application to the MD degree,
Discussion and acceptance of the thesis should not be set before 24 months from registering the M D subject;
It could be discussed and accepted either before or after passing the second part of examination

- Part 2

Program –related specialized science courses and ILOs
Students are not allowed to sit the exams of these courses before 4 years from applying to the MD degree.

Two elective courses can be set during either the 1^{st} or 2^{nd} parts.

The students pass if they get 50% from the written exams and 60% from oral exams, 60% from clinical exams of each course and 60% of summation of the written exams, oral and clinical exams of each course

500 marks for first part
1200 for second part
Elective courses 200
Written exam 40% - 70%.
Clinical and oral exams 30% - 60%.

D. Curriculum Structure: (Courses):

Levels and courses of the program:

Courses and student work load list	Course Code	Core Credit points		
		Didactic Lectures	training	total
First Part				
Essential Courses (10 CP) Course1 Medical Statistics	FAC309A	1	-	1
Course 2 Research Methodology	FAC309B	1	-	1
Course 3 Course 3: - Medicolegal Aspects & Ethics in Medical Practice and Scientific Research	FAC310C	1	-	1
Course 4: Pathology of blood diseases & Advanced microbiology and immunology **Unit 1: Pathology of blood diseases** **Unit 2: Advanced microbiology and immunology**	BLO318A#	 1 2	 - -	3
Course 5- -Genetics and advanced molecular biology	BLO318 B §	2	-	2
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy) **Unit 1: Radiotherapy** **Unit 2 : Chemotherapy**	BLO318C#	 1 1	 - -	2
Elective courses*	3 CP			
Elective course 1 Elective course 2		1.5 1.5		1.5 1.5
Thesis		40 CP		
Published researches**		40 CP		
Second Part	Specialized courses 24 CP Specialized Clinical Work (log Book) 123 CP			
1) Course 7 Advanced haematology	BLO318	24		24
Specialized Clinical Work (123 CP)			123	123
Total of second part		24	123	147

* Elective courses can be taken during either the 1st or 2nd parts.

Student work load calculation:

Work load hours are scheduled depending on the type of activities and targeted competences and skills in different courses

Elective Courses#:

- Advanced medical statistics.
- Evidence based medicine.
- Advanced infection control.
- Quality assurance of medical education.
- Quality assurance of clinical practice.
- -Hospital management

Two of the above mentioned courses are prerequisites for fulfillment of the degree.

3. Thesis / Researches:

40 CP are appointed to the completion and acceptance of the thesis.

**Another 40 points are appointed to acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

*Advanced haematology Course

Units	% from total Credit points
Module 1 : Diseases of internal medicine in relation to blood diseases	10%
Module 2: *Haemopoiesis OF RBCs and* Disease of RBCS	10%
Module 3 : **Haemopoiesis OF** WBCS **and** Disease of WBCS	10%
Module 4 :Disease of bleeding and coagulation	15%
Module 5 : Malignant blood diseases	20%
Module 6 : Haematological emergences	10%
Module 7: Blood components transfusion, bone marrow and stem cell therapy	15%
Module 8 :Laboratory diagnosis of bone marrow changes	10%

** Different Courses ILOs are arranged to be studied and assessed in the 1st and 2nd parts of the program as scheduled in the program time table.

6. Courses Contents (Annex 1)

The competency based objectives for each course/module/rotation are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

See Annex 1 for detailed specifications for each course/ module
Annex 6 III: Program Matrix

7-Admission requirements

- **Admission Requirements (prerequisites) if any :**
  - **I. General Requirements:**
    - Master degree in Specialty
  - **II. Specific Requirements:**
    - Fluent in English (study language)

VACATIONS AND STUDY LEAVE

The current departmental policy is to give working residents 2 week leave prior to first/ second part exams.

FEES:

As regulated by the postgraduate studies rules and approved by the faculty vice dean of post graduate studies and the faculty and university councils.

8-Progression and completion requirements

- Examinations of the first part (Medical statistic, Research methodology and Medicolegal Aspects and Ethics in Medical Practice and Scientific Research) could be set at 6 months from registering to the MD degree.
- Students are allowed to sit the exams of the remaining essential courses of the first part after 12 months from applying to the MD degree.
- Examination of the second part cannot be set before 4 years from registering to the degree.
- Discussion of the MD thesis could be set after 2 years from officially registering the MD subject, either before or after setting the second part exams.
- The minimum duration of the program is 4 years.

The students are offered the degree when:

1. Passing the exams of all essential, elective and specialized courses of this program as regulated by the post graduates approved rules by the faculty council.
2. Completing all scheduled CP and log book (minimum 80%).

3. Discussion and acceptance of the MD thesis.
4. Acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

9-Program assessment methods and rules (Annex IV)

Method	ILOs measured
Written examinations: **Structured essay questions** **Objective questions** **MCQ** **Problem solving**	**K & I**
Clinical: **Long/short cases** **OSCE**	**K ,I, P &G skills**
Structured oral	**K ,I &G skills**
Logbook assessment	**All**
Research assignment	**I &G skills**

Weighting of assessments:

Courses		Degrees			
First Part	Course Code	Written Exam	Oral and/or Practical l Exam		Total
Essential Courses:					
Medical Statistics	FAC309A	35	15	-	50
Research Methodology	FAC309B	35	15	-	50
Course 3:Medicolegal Aspects & Ethics in Medical Practice and Scientific Research	FAC310C	35	15	-	50
Course 4: Pathology of blood diseases & Advanced microbiology and immunology	BLO318A#	70	80	-	150
Unit 1: Pathology of blood diseases Unit 2: Advanced microbiology and immunology		20 50	30 50	- -	50 100
Course 5 :Genetics and advanced molecular biology	BLO318 B §	60	40	-	100
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)	BLO318C#	60	40	-	100
Unit 1: Radiotherapy Unit 2 : Chemotherapy		30 30	20 20	- -	50 50
Total of first part					500
Second Part					
	Course code	written	oral *	practical and Clinical	total
Specialized Courses	**BLO318D**	600			
Advanced Haematology Paper 1 - Advanced Haematology Paper 2 Advanced Haematology Paper 3 (Internal Medicine and cases) Advanced Haematology Paper 4		150 150 150 150	300	300	
Total		600	300	300	1200

* 25% of the oral exam for assessment of logbook

Total degree 1900

500 marks for first part

1200 for second part

Written exam 50 % (600 marks).

Clinical and oral exams 50 % (600 marks

Examination system:

First part:

- Written exam 2 hours in Medical Statistics and Research Methodology + oral examination

➢ Written exam 1 hours in Medicolegal Aspects and Ethics in Medical Practice and Scientific Research + oral examination

➢ Written examination 3 hours in Pathology of blood diseases & Advanced microbiology an immunology+ oral Exam

➢ Written examination 3 hours in Basics of therapy of malignant blood diseases (Radiotherapy and chemotherapy) + oral Exam

➢ Written examination 2 hours in Genetics and advanced molecular biology+ oral Exam

➢ Second part:

- Written exam 4 papers 3 hours for each in Advanced Haematology + Oral exam+ Clinical exam

Elective courses

- Written exam one paper 1 hour in Elective course 1 + Oral & Practical exam
- Written exam one paper 1 hour in Elective course 2 + Oral & Practical exam

10-Program evaluation

By whom	method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	questionnaires	#
Alumni	questionnaires	#

#Annex 5 contains evaluation templates and reports (Joined in the departmental folder).

11-Declaration

We certify that all of the information required to deliver this program is contained in the above specification and will be implemented.

All course specifications for this program are in place.

Contributor	Name	Signature	Date
Program Principle Coordinator:	- **Prof.Esam A. S.ElBeih**		**20/2 / 2017**
Head of the Responsible Department (Program Academic Director):	Pr. Dr Lubna Eltony		**20/2 / 2017**

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses

First Part

1) **Course 1: Medical statistics**
2) **Course 2: Research Methodology**
3) **Course 3: - Medicolegal Aspects and Ethics in Medical Practice and Scientific Research**
4) **Course 4 -Pathology of blood diseases & Advanced microbiology and immunology**
5) **Course 5- -Genetics and advanced molecular biology**
6) **Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)**

Course 1: Medical statistics

Name of department: Public Health and Community Medicine

Faculty of medicine

Assiut University

2016-2017

1. Course data

- **Course Title: Medical statistics**
- **Course code: FAC309A**
- **Specialty: offered to all clinical and academic specialties**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course:** Pubic Health and Community Medicine
- **Coordinator (s):**
  - Course coordinator: Prof. Ahmed M. Hany
  - Assistant coordinator (s):
    Prof. Farag Mohammed Moftah
    Prof. Hosnia Saeed Abdel Majeed
- Date last reviewed: June 2017
- **Requirements (pre-requisites) if any :**
  - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

Enable gradute students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data

3. Intended learning outcomes (ILOs):To be able to use statistical principals to manage data

A knowledge and understanding

ILOS	Methods of teaching/ learning	Methods of Evaluation
A. List the types of variables	Lecture and discussion	Written examination
B. Identify the methods of data collection	Lecture and discussion	Written examination
C. Describe the different sampling strategies	Lecture and discussion	Written examination
D. Identify types of tabular and graphic presentation of data	Lecture and discussion	Written examination
E. Identify measures of central tendency and dispersion	Lecture and discussion	Written examination
F. Identify the characters of normal distribution curve.	Lecture and discussion	Written examination

B. intellectual

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Describe the normal curves.	Lecture& Discussions	Written examination
B. Describe and summarize data	Lecture& Discussions	Written examination
C. Select the proper test of significance	Lecture& Discussions	Written examination
D. Interpret the proper test of significance	Lecture& Discussions	Written examination

C. Practical skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design data entry files.	Tutorial on SPSS	Assignments SPSS exam
B. Validate data entry.	Tutorial on SPSS	Assignments SPSS exam
C. Manage data files.	Tutorial on SPSS	Assignments SPSS exam
D. Construct tables and graphs.	Tutorial on SPSS	Assignments SPSS exam
E. Calculate measures of central tendency and dispersion.	Tutorial on SPSS	Assignments SPSS exam
F. Select, apply and interpret the proper test of significance.	Tutorial on SPSS	Assignments SPSS exam

D general skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Appraise scientific evidence	Discussions	Research assignment
B. Use information technology to manage information, access on-line medical information; for the important topics.	tutorial	Research and audits' assignment

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Introduction	A-F	A-D	-	A&B
Tables and graphics	D	A-D	-	A&B
Sampling	C	-	-	A&B
Methodology of data collection	B	-	-	A&B
Type of variables	A	-	-	A&B
Proportion test& Chi-square test	E,F	C&D	-	A&B
Student T test& Paired T test	E,F	C&D	F	A&B
ANOVA test	E,F	C&D	F	A&B
Non parametric tests	E,F	C&D	F	A&B
Discrimination analysis factor analysis	E,F	C&D	-	A&B
SPSS Introduction	A-F	A-D	-	A&B
Data entry and cleaning of data	A	A-D	A-C	A&B
Transforming of variables	A	A&B	A-C	A&B
Descriptive statistics	D	A-D	D&E	A&B
Graphic presentation	D	A&B	D	A&B
Chi square and interpretation of results	E,F	C&D	F	A&B
Correlation Regression	E,F	C&D	F	A&B
Multiple and logistic Regression	E,F	C&D	F	A&B

5. Course Methods of teaching/learning

1. Lectures
2. Assignments
3. Discussions
4. Exercises
5. Tutorial on SPSS v.16

6. Course assessment methods:

i. Assessment tools:

1. Practical examination
2. Attendance and active participation
3. Assignments
4. SPSS examination
5. written exam

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

Department lecture notes

ii. Essential books

Medical statistics

iii. Recommended books

Discovering statistics using SPSS

iii. Periodicals, Web sites, etc

8. Signatures

Course Coordinator: - Prof. Ahmed M. Hany	**Head of the Department:** - Prof. Omyma El Gebaly
Date: 20/6/2017	**Date**:20/6/2017

Course 2: Research Methodology

Name of department: All clinical and academic departments
Faculty of medicine
Assiut University
2016-2017

1. Course data

- **Course Title: Research methodology**
- **Course code: FAC309B**
- **Specialty: Offered to all clinical and academic specialties**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course: Department of public health**
- **Coordinator (s):**
  - **Course coordinator: Prof. Ali Zarzour**
  - **Assistant coordinator (s):**

    Prof. Mohamed H. Qayed
    Prof. Omaima El-Gibaly

- **Date last reviewed:** June 2017
- **Requirements (prerequisites) if any :**
  - **Completed Master degree in any of the academic or clinical departments of Medicine.**

2. Course Aims

To provide graduate students with the skills of:

- Research proposal,
- Writing planning and implementing rigorous research,
- Writing and publishing scientific papers.

3. Intended learning outcomes (ILOs):To be able to write a rigorous research proposal

A knowledge and understanding

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Explain differences between different study designs	Lecture and discussion	Written examination
B. Identify sources and types of bias in research		
C. Describe the different sampling strategies, and compute sample size		
D. Select and design valid measurement tools for research		
E. Explain ethical issues in conducting research on human subjects		
F. describe the rules of authorship in scientific writing		
G. List the steps involved in proposal writing		

H. Identify a research problem within a conceptual framework	Lecture on Criteria to Consider to identify a research problem	discussion
I. Use the web sources to do a literature search	Practical tutorial on web	assignment
J. Select the appropriate study design for the research question	Lecture on various study designs	Written examination
K. Minimize bias in designing research	Lecture on the different types of bias	Written examination
L. Screening & theoretical background	Lectures on criteria for successful screening program& criteria for evaluation a screening test.	Written examination

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Apply basic science & knowledge for appraising scientific literature	Discussions &seminars	Written examination

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Develop a budget and time line for the research	Tutorial	Assignments
B. Design a data entry file	Tutorial on Epi-info or Excel	Assignments Written exam
C. Identify steps required in fielding the study	Lecture	Assignments Written exam
D. Identify steps required for calculation Sensitivity, Specificity, positive predictive value, negative predictive value, Accuracy of a screening test	Lecture	Assignments Written exam

D general skills

Practice based learning improvement & professionalism

(Scientific Paper writing skills)

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. To be able to write an abstract	Tutorial	Written examination case study for critque
B. Write the introduction	Tutorial	Written examination
C. Write the methodology section	Tutorial	Written examination
D. Present the results	Tutorial	Written examination
E. Perform Discussion section	Tutorial	Written examination
F. Learn Authorship ethical rules	Tutorial	Written examination

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Introduction & proposal writing	G	A	A	A-F
Epidemiological Study designs	A,J	A	B,C	-
Screening & theoretical background	L	A	-	-
Screening practical	L	A	D	-
Sample size calculation	B	A	B,C	-
Research bias	H	A	C	F
Ethics in research	E,F	A	C	F

5. Course Methods of teaching/learning:

1. Lectures
2. Assignments
3. Discussion
4. Exercises

6. Course assessment methods:

i. Assessment tools:

1. Written examination
2. Attendance and active participation
3. Class
4. Assignments

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Department lecture notes

ii. Essential books

- An epidemiologic Approach to Reproductive Health,CDC,FHI, and WHO Phyllis A. wingo, James E.Higgens, Goerge L. Rubin, and S.Christine Zahniser

iii. Recommended books

- Evidence Based Medicine How to practice and teach EBM.
- David Sachett, Sharon E. Straus, W.Scott Richardson , William Rosenberg R.Brain Haynes

iv. Periodicals, Web sites, … etc

- Dissertation workshop open courseware JHSPH

8. Signatures

Course Coordinator:	**Head of the Department:**
- Prof. .Ali Zarzour	- Prof. Omyma El Gebaly
Date: 5/6/2017	**Date:** 5/6/2017

Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Name of department:
Forensic medicine and clinical toxicology
Faculty of medicine
Assiut University
2016-2017

1. Course data

- **Course Title: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research**
- **Course code: FAC310C**
- **Specialty: *General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology* (1st part).**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course: Forensic Medicine and Clinical Toxicology**

- **Coordinator (s):**
  - **Course coordinator:**
    Prof. Wafaa Mohamed Abdel Moneium
  - **Assistant coordinator (s) Assist.**
    Prof. Amal Ali.Mohammed

- **Date last reviewed:6– 2017.**

- **Requirements (prerequisites) if any :**
  - **Completed Master degree.**

2. Course Aims

To describe the basic ethical and medicolegal principles and bylaws relevant to practice in the field of General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology

3. Intended learning outcomes (ILOs):

A knowledge and understanding

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Mention principals of Taking consent.	Lecture and discussion	Oral &Written exam
B. Mention principals of Writing a death certificate	Lecture and discussion	Oral &Written exam
C. Mention principals of diagnosing death.	Lecture and discussion	Oral &Written exam
D. Mention principals of writing toxicological reports.	Lecture and discussion	Oral &Written exam
E. Explain principals of medical reports.	Lecture and discussion	Oral &Written exam
F. List indications and principals of induced emesis, gastric lavage and samples collection.	Lecture and discussion	Oral &Written exam

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present case , seminars in death certificate	Lecture and discussion	Oral &Written exam
B. Present case, seminars in toxicological cases	Lecture and discussion	Oral &Written exam

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Identify medical ethics and ethics in research.	Lecture and discussion	Reading Discussion
B. Prepare and write consent.	Lecture and discussion	Reading Discussion
C. Identify medical responsibilities.	Lecture and discussion	Reading Discussion
D. Write death certificate.	Lecture and discussion	Reading Discussion and active participation
E. Deal with a case of Suspicious death	Lecture and discussion	Reading Discussion and active participation
F. Perform gastric lavage, induce emesis, and obtain samples.		
G. Write medical and toxicological reports	Lecture and discussion	Reading Discussion and active participation
H. Develop and carry out		

patient management plans for Euthanaesia, and Organ Transplantation		
I. Counsel patients and their families about specialty related conditions including Permanent infirmities, Euthanasia, and Organ Transplantation		

D general skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present a case.	Lecture and discussion	Global rating logbook
B. Write a consultation note	Lecture and discussion	Global rating logbook
C. Inform patients and maintaining comprehensive.	Lecture and discussion	Global rating logbook
D. Make timely and legible medical records	Lecture and discussion	Global rating logbook
E. Acquire the teamwork skills	Lecture and discussion	Global rating logbook

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
1. Death and death certificate.	B,C	A	D,E	A
2. Medical Reports	A		G	A,D,E
3. Toxicological reports	D,F	B	G,F	A,E
4. Ethics in research.	A		A	
5. Medical ethics.	E		A,B,C,H,I	B,C,E

5. Course Methods of teaching/learning:

1. Lectures.
2. Discussions.
3. Exercises.

6. Course assessment methods:

i. Assessment tools:

1. Written examination.
2. Attendance and active participation.
3. Oral examination.

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Course notes.
- Staff members print out of lectures and/or CD copies.

ii. Essential books

- Ballantyne B., Marrs T. and Syversen T.(1999):General and Applied Toxicology.2nd edition. MACMILLAN REFERENCE LTD.UK.
- Bernard Knight and Pekka Saukko (2004): Knight Forensic Pathology. Hodder Arnold press

iii. Recommended books

- Klassen D. (2001): Casarettand Doull s. Toxicology the basic science of poisons. McGrow. Hill press medical publishing division New York

iv. Journal and web site

- Journals of all Egyptian Universities of Forensic Medicine and Clinical Toxicology.
- All International Journals of Forensic Medicine and Clinical Toxicology which available in the university network at www.sciencedirect.com. As :

  Forensic Science International Journal.

  Toxicology Letter.

8. Signatures

- Course Coordinator: **Prof. Wafaa Mohamed Abdel Moneium**	**- Head of the Department:** **Prof. Wafaa Mohamed Abdel Moneium**
Date: 10- 6-2017	**Date: 10- 6-2017**

Course 4 Pathology of Blood diseases and advanced Microbiology and Immunology

Course 4 Unit 1:Pathology of Blood diseases

1. Unit data

- **Unit Title: Pathology of Blood diseases**
- **Unit code:** BLO318A#
- **Specialty is Clinical haematology**
- **Number of credit points: Lectures 1credit point , practical 0 , total (1) .**

- **Department (s) delivering the Unit :** Department of INTERNAL MEDICINE - Clinical haematology unit and Pathology Department , Faculty of Medicine- Assiut- EGYPT
- **Coordinator (s):**

- **Staff member of Clinical Haematology in conjunction with staff members of pathology**

Unit Aims

-The student should acquire the pathological facts necessary for *Clinical Haematology.*

Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Illustrate Principles of: -Bone marrow diseases & interpret BM trephine biopsy. -Diagnosis of malignant haematological disorders	-Lectures	-Written and oral examination - Log book
B-Describe Pathologic Details of: -Lymphomas (Hodgkins' Disease and NHL) -Granulomas including TB lymphadenopathy -Aplastic Anaemia and myelodysplastic syndromes	-Lectures	-Written and oral examination - Log book

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of pathology with clinical reasoning, diagnosis and management of common diseases related to Clinical Haematology	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Haematology		

C- Practical skills

Practical: 0 hours

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Log book Oral exam

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A .A.B	-Clinical round -Seminars -Lectures	- Logbook Oral exam Chick list

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	Observation Senior staff experience Case taking	Logbook Oral exam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems	-Observation -Senior staff experience	1. 360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: One year after application to MD degree

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
-Bone marrow diseases & interpret BM trephine biopsy.	A	A-B	-	**A-D**
Diagnosis of malignant haematological disorders	A	A-B	-	**A-D**
Granulomas including TB lymphadenopathy	B	A-B	-	**A-D**
Lymphomas (Hodgkins' Disease and NHL) - -Aplastic Anaemia and myelodysplastic syndromes	B	A-B	-	**A-D**

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1- Written and oral examination
2- Log book

ii. Time schedule: One year after application to MD degree

iii. Marks: 50

8. List of references

i. Lectures notes

prepared by the staff members of Pathology.

ii. Essential books

-- Robbin's Basic Pathology 8 edition 2007

iii. Recommended books

- Rubin Clinicopathology fifth edition 2013

iv. Periodicals, Web sites, … etc

9. Signature

Course 4 Unit 1 Coordinator: Prof. Sanaa Sotohe	**Head of the Department: Prof. Eatemad Mahmoud**
Date: 20/2 / 2017	**Date: 20/2 / 2017**

Course 4 Unit 2 Microbiology and immunology

- **Unit Title: Microbiology and Immunology**
- **Unit code:** BLO318A#
- **Specialty is Clinical haematology**
- **Number of credit points: Lectures 2credit point , practical 0 , total (2) .**

- **Department (s) delivering the Unit :** Department of INTERNAL MEDICINE - Clinical haematology unit and **: Microbiology and Immunology** Department , Faculty of Medicine- Assiut- EGYPT
- **Coordinator (s):**

- **Staff member of Clinical Haematology in conjunction with staff members of : Microbiology and Immunology**

2. Unit Aims

-The student should acquire the facts of Microbiology and immunology necessary for Clinical Haematology

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe Principles of : -Infections in immune deficient patients -General bacteriology related to haematological diseases & Tuberculosis -General virology, Hepatitis viruses &Viruses inducing haematological diseases (HIV, CMV, EBV, Parvo v..) -Common systemic fungal infections -Immune reactions and autoimmunity -immune deficiency diseases -HLA typing, transplant rejection & graft versus host disease	-Lectures	-Written and oral examination -Log book

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Microbiology and immunology with clinical reasoning, diagnosis and management of common diseases related to Clinical Haematology	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C- Practical skills = 0

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Log book Oral exam

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A	-Clinical round -Seminars -Lectures	- Logbook Oral exam Chick list

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	Observation Senior staff experience Case taking	Logbook Oral exam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems	-Observation -Senior staff experience	1. 360o global rating

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: One year after application to MD degree

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
-Infections in immune deficient patients	A	A	-	**A-D**
General bacteriology related to haematological diseases & Tuberculosis	A	A	-	**A-D**
- -General virology, Hepatitis viruses &Viruses inducing haematological diseases (HIV, CMV, EBV, Parvo v..)	A	A	-	**A-D**
-Common systemic fungal infections	A	A	-	**A-D**
-Immune reactions and autoimmunity	A	A		**A-D**
-immune deficiency diseases	A	A		**A-D**
-HLA typing, transplant rejection & graft versus host disease	A	A		**A-D**

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1- Written and oral examination
2- Log book

ii. Time schedule: One year after application to MD degree
iii. Marks: 100

8. List of references

i. Lectures notes

prepared by the staff members of Microbiology and Immunology

ii. Essential books

Essential clinical immunology second edition 2009

iii. Recommended books

Book of department of microbiology

iv. Periodicals, Web sites, … etc

9. Signature

Course 4 Unit 2 Coordinator: Prof. Enas Abd El Megeed	**Head of the Department: Prof. Kaled Hasaneen**
Date: 20/2 / 2017	**Date20/2 / 2017**

Course 5 Genetics and advanced molecular biology

1. Course data

- **Course Title: Genetics and Advanced Molecular Biology**
- **Course code:** BLO318B §
- **Specialty is Clinical haematology**
- **Number of credit points: Lectures 2 credit point , practical 0 , total (2) .**
- **Department (s) delivering the Course : Department of INTERNAL MEDICINE - Clinical haematology unit and clinical pathology departments of South Egypt Cancer Institute**
- **Coordinator (s):**

- **Staff member of Clinical Haematology in conjunction with staff members of clinical pathology departments of South Egypt Cancer Institute**
- **Date last reviewed: September 2017**
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Course Aims

- -The student should acquire the facts of Genetics and Advanced Molecular Biology necessary for Clinical Haematology.

Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Illustrate Principles of: ➢ The genetics of haematopiotic malignancy ➢ Genetic abnormalities associated with haematopiotic malignancy ➢ Consequences of acquired genetic abnormalities. ➢ Diagnostic methods used to study malignant cells ➢ Value of genetic markers in management of haematological malignancy ➢ Value of genetic markers in management of haematological malignancy ➢ -Genetic counseling ➢ Gene therapy in haematology ➢ Role of stem cell therapy of genetic diseases ➢ Molecular basis of inherited hematological disorders	-Lectures	-Written and oral examination - Log book

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of pathology with clinical reasoning, diagnosis and management of common diseases related to Clinical Haematology	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Haematology		

C- Practical skills

Practical: 0 hours

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Log book Oral exam

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A	-Clinical round -Seminars -Lectures	- Logbook Oral exam Chick list

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	Observation Senior staff experience Case taking	Logbook Oral exam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems	-Observation -Senior staff experience	1. 360o global rating

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: One year after application to MD degree

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
The genetics of haematopiotic malignancy	A	A-B	-	**A-D**
Genetic abnormalities associated with haematopiotic malignancy	A	A-B	-	**A-D**
Consequences of acquired genetic abnormalities.	A	A-B	-	**A-D**
Diagnostic methods used to study malignant cells	A	A-B	-	**A-D**
Value of genetic markers in management of haematological malignancy	A	A-B	-	**A-D**
Value of genetic markers in management of haematological malignancy	A	A-B	-	**A-D**
-Genetic counseling	A	A-B	-	**A-D**
Gene therapy in haematology	A	A-B	-	**A-D**
Role of stem cell therapy of genetic diseases	A	A-B	-	**A-D**
Molecular basis of inherited hematological disorders	A	A-B	-	**A-D**

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1- Written and oral examination
2- Log book

ii. Time schedule: One year after application to MD degree

iii. Marks: 100

8. List of references

i. Lectures notes

prepared by the staff members of Clinical Pathology South Egypt Cancer Institute

ii. Essential books

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iii. Recommended books

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iv. Periodicals, Web sites, … etc

9. Signature

Course 5 Coordinator: **…….**	**Head of the Department:** **……**
Date: 20/2 / 2017	**Date: 20/2 / 2017**

Course 6 Basis of therapy of malignant blood diseases Radiotherapy and Chemotherapy

Course 6 Unit 1:Radiotherapy

1. Unit data

- **Unit Title: Radiotherapy**
- **Unit code:** BLO318C#
- **Specialty is Clinical haematology**
- **Number of credit points: Lectures 1credit point , practical 0 , total (1) .**

- **Department (s) delivering the Unit : Clinical Oncology department**
- **Coordinator (s):**

  Staff member of Clinical Oncology department

  Date Last Reviewed : 20/2 / 2017

Unit Aims

-The student should acquire the facts of Radiotherapy necessary for management of diseases related to *Clinical Haematology.*

Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Illustrate Details of : -Role of radiotherapy in Hodgkin lymphoma -Role of radiotherapy in non Hodgkin lymphoma Role of radiotherapy in plasma cell disorders -Role of radiotherapy in mycosis fungoides	-Lectures	-Written and oral examination - Log book

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Radiotherapy with clinical reasoning, diagnosis and management of common diseases related to Clinical Haematology	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Haematology		

C- Practical skills

Practical: 0 hours

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Log book Oral exam

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A	-Clinical round -Seminars -Lectures	- Logbook Oral exam Chick list

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	Observation Senior staff experience Case taking	Logbook Oral exam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems	-Observation -Senior staff experience	1. 360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: One year after application to MD degree

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
-Role of radiotherapy in Hodgkin lymphoma	A	A-B	-	**A-D**
-Role of radiotherapy in non Hodgkin lymphoma	A	A-B	-	**A-D**
Role of radiotherapy in plasma cell disorders	A	A-B	-	**A-D**
-Role of radiotherapy in mycosis fungoides	A	A-B	-	**A-D**

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1- Written and oral examination
2- Log book

ii. Time schedule: One year after application to MD degree
iii. Marks: 50

8. List of references

i. Lectures notes

prepared by the staff members of Clinical Oncology .

ii. Essential books

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iii. Recommended books

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iv. Periodicals, Web sites, … etc

9. Signature

Course 5 Unit 1 Coordinator: **…….**	**Head of the Department:** **……**
Date: 20/2 / 2017	**Date: 20/2 / 2017**

Course 6 Unit 2:Chemotherapy

1. Unit data

- **Unit Title: Chemotherapy**
- **Unit code:** BLO318C#
- **Specialty is Clinical haematology**
- **Number of credit points: Lectures 1credit point , practical 0 , total (1) .**

- **Department (s) delivering the Unit : Medical Pharmacology department**
- **Coordinator (s):**

  Staff member of Medical Pharmacology department

- **Date Last Reviewed : 20/2 / 2017**

Unit Aims

-The student should acquire the facts of Pharmacology necessary for management of diseases related to *Clinical Haematology.*

Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	**Methods of teaching/ learning**	***Methods of Evaluation***
A. Illustrate Details of : <u>1-Chemotheraputic agents used in treatment of haematological malignancies</u> Alkylating agents Cytotoxic Antibiotics Antimetabolites Pyrimidine antagonists Plant derivatives and miscellaneous <u>2-Biological response modifying agents in treatment of haematological malignancies</u> Alpha interferon, tyrosine-kinase inhibitors and all trans retinoic acid Monoclonal antibodies	-Lectures	-Written and oral examination - Log book

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Pharmacology with clinical reasoning, diagnosis and management of common diseases related to Clinical Haematology	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Clinical Haematology		

C- Practical skills

Practical: 0 hours

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Log book Oral exam

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A	-Clinical round -Seminars -Lectures	- Logbook Oral exam Chick list

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	Observation Senior staff experience Case taking	Logbook Oral exam

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in different health care delivery settings and systems	-Observation -Senior staff experience	1. 360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: One year after application to MD degree

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
1-Chemotheraputic agents used in treatment of haematological malignancies	A	A-B	-	**A-D**
2-Biological response modifying agents in treatment of haematological malignancies	A	A-B	-	**A-D**

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

2. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1- Written and oral examination
2- Log book

ii. Time schedule: One year after application to MD degree

iii. Marks: 50

8. List of references

i. Lectures notes

prepared by the staff members of Pharmacology

ii. Essential books

Book of the department of Pharmacology -

9. Signature

Course 5 Unit 2 Coordinator: Prof. Mostafa Mahmoud	**Head of the Department: Prof. Mostafa Mahmoud**
Date: 19-11-2017	**Date: 19-11-2017**

Second Part

Course 7 Advanced haematology

Name of department: Clinical haematology
Faculty of medicine
Assiut University
2016-2017

1. Course data

- **Course Title: Clinical haematology.**
- **Course code: BLO318D**
- **Specialty is Clinical haematology**
- **Number of Credit point: lecture** 24 **credit points, practical** 123 ,total (147)

- **Department (s) delivering the course:** Department of INTERNAL MEDICINE - Clinical haematology unit ,- Faculty of Medicine- Assiut- EGYPT
- **Coordinator (s):**
  - **Course coordinator: Prof.Esam A. S.ElBeih**
  - **Assistant coordinator (s) Prof. Dr. Youseryia A. Ahmad**
  - **Dr. Osama A. Ibrahim**
  - **Dr. Howayda Nafady**
  - **Dr.Aadel H. Mekkawi**
  - **Dr.Mohammad Ramadan**
  - **& Dr. Ahmad F. Thabet**
  - **DR.Rania Hafez**
  - **Dr. Safenaz Husein**
  -
- **Date last reviewed: 20/2 / 2017**

This course consists of 8 Units(Modules)

Module 1 : Diseases of internal medicine in relation to blood diseases

Module 2: Haemopoiesis OF RBCs and Disease of RBCS

Module 3 : Haemopoiesis OF WBCS and Disease of WBCS

Module 4 :Disease of bleeding and coagulation

Module 5 : Malignant blood diseases

Module 6 : Haematological emergences

Module 7: Blood components transfusion, bone marrow and stem cell therapy

Module 8 :Laboratory diagnosis of bone marrow changes

2. Course Aims

1/1 To enable candidates to master high level of patients care by teaching high level of clinical skills, bedside care skills in clinical haematology. In addition to update their basic medical knowledge in other clinical specialties gastroenterology, rheumatology, endocrine, chest, neurology and intensive care medicine.

1/2. Provide specialists with fundamental knowledge dealing with immune-compromised and critically ill patients, ICU equipments, techniques, indications, contraindications and training skills of different intensive care techniques.

1/3 To enable candidates to be in continuously changing medical and haematological guidelines for diagnosis and treatment.

1/4 To introduce candidates to the basics and advances of scientific medical research to understand in details and get the best of published scientific research and do their own.

1.5. To enable candidates to have professional careers as a consultant in Egypt and recognized abroad.

1/6.To enable candidates to pursue higher studies and subspecialties.

1.7.To enable candidates to be in continuously changing medical and haematological guidelines for diagnosis and treatment.

1.8. To acquire in depth the physiological and pathological Background necessary for clinical haematology in clinical reasoning, diagnosis and management of systemic diseases.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

Unit 1 Diseases of internal Medicine related to blood diseases

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions: Diseases of internal medicine in relation to blood diseases -Chronic liver diseases -Connective tissue diseases -Anemia in renal diseases -Renal tumors -Viral Diseases , EBV. CMV , PARVO VIRUS 19, Viral hepatitis -Some endocrinal diseases as DM, adrenal disorders, Acromegaly. Thyroid disorders - Pulmonary diseases , COPD, Malignant pleural effusion , arterovenous fistula, All causes of hypoxemia . - Infective endocarditis	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B. <u>Mention the principles of:</u> -Disordes affecting the immune system -Skin diseases -Allergic disease -Some Brain tumor		

-Increase intracranial tension		
C. Mention Basics of the following rare diseases and conditions: Acromegaly Aterovenous fistula		
D. Explain the facts and principles of the relevant Basic supportive sciences related to Diseases of internal medicine in relation to blood diseases		
E. Explain the facts and principles of the relevant Clinically supportive sciences related to Diseases of internal medicine in relation to blood diseases		
F. Describe the basic ethical and medico-legal principles relevant to Diseases of internal medicine in relation to blood diseases		
G. Describe the basics and measurement of quality assurance to ensure good clinical care in immune-compromised patients.		
H. Explain the ethical and scientific principles of medical research		
I. Explain the impact of common health problems in the field of Diseases of internal medicine in relation to blood diseases on the society.		

Unit 2, 3 Haematopoiesis, Benign RBCs and WBCs diseases

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions: a. Iron defcicieny anaemia and microcytic hypochromic anaemia b. Megaloblastic anaemia c. Congenital and acquired haemolytic anaemia d. Acquired and constitutional aplastic anaemia e. Iron overload disorders f. SECONDARY Polycythaemia g. Leucopenias and leucocytosis h. Primary and secondary immunodeficiency diseases i. Reactive lymphocyte disorders and lymphadenopathy	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B. Mention the principles of: Iron, Vitamin B12 and folic acid metabolism RBC & Hb physiology WBC & platelet physiology Haemostasis system and its control Cellular and humoral immunity -Cytogenetics and molecular basis of oncology -Application of nuclear medicine in haematology		
C. Mention Basics of the following rare diseases and conditions: ▪ Congenital leucopenia ▪ Effect of environmental pollutants on bone haematopoiesis		

D. Explain the facts and principles of the relevant Basic supportive sciences related to haematopoiesis		
E. Explain the facts and principles of the relevant clinically supportive sciences related to haematopoiesis		
F. Describe the basic ethical and medico-legal principles relevant to haematopoiesis		
G. Describe the basics and measurement of quality assurance to ensure good clinical care in immune-compromised patients.		
H. Explain the ethical and scientific principles of medical research		
I. Explain the impact of common health problems in the field of haematopoiesis on the society.		

Unit 4 Diseases of bleeding and coagulation

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A-Explain natural history, presentation and complications of update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions: a. Hemophilia, von Willebrand's disease and other hereditary coagulation disorders b. Acquired coagulation disorders (DIC & liver dis.) c. Thrombotic thrombocytopenic Purpura and HUS d. Thrombocytopenias – acquired and hereditary e. Qualitative platelet disorders and Hereditary vW disease f. Vascular purpuras g. Hereditary and acquired thrombophilias h. Anticoagulation and its disorders i. Thrombocytosis reactive and ET	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B-Mention the principles of ▪ coagulation and the coagulation pathway including control mechanisms and fibrinolysis		
C-Outline the use of molecular biological techniques to identify genetic disorders		
D-Explain the facts and principles of the relevant basic supportive sciences related to bleeding or thrombophilic patients.		
E-Describe and explain the diagnostic methods used in assessment of coagulation disorders including specific factor assays		
F-Describe the basic ethical and medicolegal		

principles relevant to bleeding or thrombophilic patients.		
G-Describe the basics and measurement of quality assurance to ensure good clinical care in bleeding or thrombophilic patients..		
H-Explain the ethical and scientific principles of medical research.		
I- Explain the impact of common health problems in bleeding or thrombophilic patients on the society.		

Unit 5 Malignant blood diseases

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Explain update and evidence based etiology, clinical picture, diagnosis and management of the following common diseases and clinical conditions: ▪ Myelodysplastic syndrome ▪ Acute myeloid leukemias ▪ Acute lymphoblastic leukaemia ▪ Chronic myelocytic leukaemia ▪ Chronic Lymphocytic leukaemia ▪ Lymphomas ▪ Myeloproliferative diseases(Chronic meyloid leukaemia, Polycythemia Vera, myelofibrosis and ET) ▪ Multiple Myeloma and Plasma cell disorders ▪ Heavy chain disease and Waldenstrom Macroglobulinaemia and Hairy cell leukaemia	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B.Mention the principles of ▪ Management of neutropenic fever ▪ Dealing with chemotherapy ▪ Dealing with the neurologic complications of haematological malignancies ▪ Palliative treatment	-Seminars and Clinical meetings - Discussion in clinical rounds - Case presentation - Journal clubs	Problem based exam Clinical rounds
C. Mention Basics of the following rare diseases and conditions:	- Case presentation - Journal clubs	Problem based exam

✚ Rare Types of Lymphomas as Mycosis Fungoides some T-cell lymphomas, vascular Lymphoma ✚ Castlemann syndrome ✚ Hypereosinophilic syndrome ✚ Rare Types of leukaemia s (Biphenotypic)	- Discussion in clinical rounds - Personal study - Tutorial	Clinical rounds
D-Explain the facts and principles of the relevant basic supportive sciences related to haematological malignancies: ✚ Genetic abnormalities in haematological malignancies ✚ Immunological aspects of haematological malignancies ✚ Pharmacological basis of chemotherapy	-Lecture - seminar - Journal club -Personal study	Written exam :
E-Explain the facts and principles of the relevant clinically supportive sciences related to Advanced Haematology: ✚ Radiotherapy ✚ Transfusion therapy ✚ Dealing with neutropenic patients ✚ Palliation	- Case presentation - Journal clubs - Discussion in clinical rounds - Personal study - Tutorial	
F. Describe the basic ethical and medicolegal principles relevant to Advanced Haematology ✚ Taking informed consent ✚ Writing a detailed informative report about the patient case ✚ Dealing with different health authorities ✚ Securing the best chance of treatment ✚ Considering the cost benefit relationship with respect to the patient interest ✚ Considering the security of the patient	- Case presentation - Journal clubs - Discussion in clinical rounds - Personal study - Tutorial - Tailored job prescription	_ Problem based exam Clinical rounds -

G. Describe the basics and measurement of quality assurance to ensure good clinical care in Clinical Haematology	- Case presentation - Journal clubs - Discussion in clinical rounds - Personal study - Tutorial - Tailored job prescription	Audit -Clinical round discussion - Case presentation - Problem based Exam
H. Explain the ethical and scientific principles of medical research:	- Journal Club - Supervising theses	- Journal Clubs - Thesis Discussion
I.Explain the impact of common health problems in the field of Advanced Haematology on society	- Sharing in planning the field project - Journal Club - Discussing the reports of the admission and discharge - Doing field study	Presenting field study

Unit 6 Haematological Emergencies

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A-Explain update and evidence based etiology, clinical picture, diagnosis and management of the following diseases and clinical conditions: - Hazards of transfusion Medicine - Hypotension -- Acute Urticaria - Oliguria& ARF -- Chest tightness -- Skin rash - Acute and Chronic GVHD - Massive transfusion problems - complications of stem cell transplantation-- - --Management of neutropenic fever - - Management of DIC	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B-Mention the principles of following: -Pathophysiology of Acute renal Failure -Shock in Haematological malignancy - DIC		
C-Mention Basics of the rare transfusion therapy adverse reaction		
D-Explain the facts and principles of the relevant basic supportive sciences related to Haematological Emergencies.		
E-Explain the facts and principles of the relevant clinically supportive sciences related to Haematological Emergencies.		
F-Describe the basic ethical and medicolegal principles relevant to Haematological Emergencies.		

G. Describe the basics and measurement of quality assurance to ensure good clinical care in Haematological Emergencies.		
H. Explain the ethical and scientific principles of medical research		
I. Explain the impact of common health problems in the field of Haematological Emergencies.on the society.		

Unit 7 Blood component transfusion and Stem cell therapy

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A--Mention the principles of following blood component transfusion : a) Packed RBCs Transfusion b) Platelet transfusion and Apharesis c) Plasma Transfusion d) Fresh Frozen Plasma Transfusion e) Albumin Transfusion f) Immunoglobulin Transfusion g)Cryoprecipitate Transfusion h) Coagulation factors Transfusion i) Stem Cell Transfusion		
B-Mention Basics of the rare transfusion therapy adverse reaction		
C-Explain the facts and principles of the relevant basic supportive sciences related to transfusion therapy		
D-Explain the facts and principles of the relevant clinically supportive sciences related to transfusion therapy		
E-Describe the basic ethical and medicolegal principles relevant to transfusion therapy		
F- Describe the basics and measurement of quality assurance to ensure good clinical care in transfusion therapy.		
G-Explain the ethical and scientific principles of medical research		
H-Explain the impact of common health problems in the field of transfusion therapy on the society.		

Unit 8 Laboratory Diagnosis of Bone Marrow changes

ILOs	**Methods of teaching/ learning**	***Methods of Evaluation***
A-Explain the principal of: • Blood Films normal , benign and malignant • Bone Marrow Aspirate • Bone Marrow Biopsy • Hemoglobin Electrophoresis • Manual and Automated Hemostasis Testing • Platelet Function Tests • Workup of Hemophilia • Workup of Thrombophilia • Flowcytometry introduction , basis , clinical application and interpretation in benign and malignant hematological disorders	-Lecture - seminar -outpatient -inpatient -case presentation -Direct observation -tutorial) - journal club, -Critically appraised topic.	-OSCE -Written Exam - Oral Exam - Case presentation -MCQ exam -Log book
B-Outline making and staining of peripheral blood films and setting up and use of the light microscope Describe the use of different stains		
C-Describe the methods for obtaining bone marrow aspirate and trephine biopsies		
D-Outline basic Blood Transfusion techniques (manual and automated)		
E-Describe the techniques for coagulation testing including automation of coagulation tests and thrombophilia tests Outline current methods for automated coagulation testing		
F-Define the presentation and management of common haematological disorders		
G-Identify normal and abnormal peripheral blood films including those flagged as abnormal by MLSO or automated counter		

H-Describe the indications for and technique of performing bone marrow aspirate and trephine biopsies		
I-Define the indications for use of cytochemical staining, immunophenotyping and cytogenetics as applied to blood and bone marrow samples		

B-Intellectual outcomes For all unit

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design and present case in common problem related to Clinical haematology	Clinical rounds Senior staff experience	Procedure/case presentation Log book and Portfolios
B. Apply the basic and clinically supportive sciences which are appropriate to Clinical haematology related problems.		
C. Demonstrate an investigatory and analytic thinking "problem – solving "approaches to clinical situation related to Clinical haematology		
D. Plan research projects.		
E. Write scientific papers.		
F. Lead risk management activities as a part of clinical governs as in: -Haemolytic crisis including incompatible blood transfusion reactions -Life-threatening leucopenia -Life-threatening bleeding tendency - Life-threatening thrombophilia - BMT rejection - Tumor lysis syndrome		
G. Plain quality improvement activities in the field of medical education and clinical practice in Clinical haematology		
H. Create and innovate plans, systems, and other issues for improvement of performance in Clinical haematology		

I. Present and defend his / her data in front of a panel of experts		
J. Formulate management plans and alternative decisions in different situations in the field of the Clinical haematology		

C-Practical skills (Patient Care)

A- FOR Unit 1 -6

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Take history, examine and clinically diagnose different conditions related to Clinical Hematology	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching)	-OSCE at the end of each year -log book & portfolio
B-<u>Order the following non invasive and invasive diagnostic procedures</u> -Complete blood count and blood film - Specific tests for congenital anaemias. -Haemoglobin electrophoresis. -Bone marrow examination (aspiration and/or biopsy) -Pathological reports for different tissues including spleen, liver, lymph nodes or body fluids. - Genetic studies eg. Karyo -typing - Immune phenotyping, PCR and FISH -X ray chest -Abdominal Ultrasound	-Clinical round with senior staff Observation -Post graduate teaching	

-Kidney function test -Serum electrolytes		
C-Interpret the following non invasive/invasive diagnostic procedures - Complete blood count and blood film - Specific tests for congenital anaemias. -Haemoglobin electrophoresis. -Bone marrow examination (aspiration and/or biopsy) -Pathological reports for different tissues including spleen, liver, lymph nodes or body fluids. - Genetic studies eg. Karyotyping - Immune phenotyping, PCR and FISH -X ray chest -Abdominal Ultrasound -Kidney function test -Serum electrolytes	Clinical round with senior staff Observation -Post graduate teaching	
D-Perform the following non invasive and invasive diagnostic procedures. a. -ECG b. -Blood gases Diagnostic US guided Pleural fluid aspiration c. Diagnostic aspiration from lumbar puncture, pleural fluid and ascites.	-Hand on workshops -Perform under supervision of senior staff	- Procedure presentation - Log book - Chick list
E-Prescribe the following non invasive/invasive therapeutic procedures: Describe the pharmaceuticals and blood products available for the management of excessive bleeding, their indications and side-effects - Aspiration from pleural fluid and ascites. -Splenectomy - BMT	Clinical round with senior staff Observation -Post graduate teaching	- Log book - Chick list

- Demonstrates competence in the treatment and prophylaxis of thrombophilic conditions - Practices safe and effective initiation of anticoagulant therapy and thromboprophylaxis -Interprets and evaluates monitoring of anticoagulation and advises appropriately		
<u>F--Perform the following non invasive/invasive therapeutic procedures</u> - Central venous line placement - Airway management - Endotracheal intubation	-Hand on workshops -Perform under supervision of senior staff	- Procedure presentation - Log book - Chick list
G-Develop and carry out patient management plans for problems mentioned in A.A for unit 1-6.	Clinical round with senior staff	
H-Counsel and educate patients and their family about: - Sterilization procedures - Care for immune-compromised patients - Care for bleeding patients	Clinical round with senior staff	
I-Use information technology to support patient care decisions and patient education for disease conditions in units 1-6.	-Post graduate teaching -Clinical round with senior staff	
J-Provide health care services aimed at preventing the disease conditions in units 1-6.	-Post graduate teaching -Clinical round with senior staff	
K- Work with health care professionals, including those from other disciplines, to provide patient-focused care	Clinical round with senior staff	
L-Write competently all forms of patient charts and sheets including reports evaluating these	Clinical round with senior	

charts and sheets (Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)	staff	

For Unit 7 and 8

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Take history, examine and clinically diagnose different conditions related to Clinical Hematology	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching)	-OSCE at the end of each year -log book & portfolio
B-Order the following non invasive and invasive diagnostic procedures -Complete haemogram -Platelet function tests -Tumor markers and immunophenotyping -Bone marrow aspiration -Bone marrow biopsy	-Clinical round with senior staff Observation -Post graduate teaching	
C-Interpret the following non invasive/invasive diagnostic procedures - Complete haemogram -Platelet function tests -Bone marrow aspiration -Bone marrow biopsy	Clinical round with senior staff Observation -Post graduate	

	teaching	
D-Prescribe the following non invasive/invasive therapeutic procedures. - Choice of drug regimens for diseases mentioned in A.A .	Clinical round with senior staff Observation -Post graduate teaching	- Log book - Chick list
E-Develop and carry out patient management plans for problems mentioned in A.A.	Clinical round with senior staff	
F-Use information technology to support patient care decisions and patient education for Haematology related conditions.	-Post graduate teaching -Clinical round with senior staff	
G- Work with health care professionals, including those from other disciplines, to provide patient-focused care	Clinical round with senior staff	
H-Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets (Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records	Clinical round with senior staff	

D-General Skills

For all unit of this course

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology in the common problems (plain and conduct audit cycles)	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	-Global rating -Procedure/case presentation -Log book and Portfolios -Chick list
B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	-Global rating -Procedure/case presentation Log book and Portfolios -Chick list
C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness		
D. Use information technology to manage information, access on-line medical information; and support their own education		
E. Lead the learning of students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Create and sustain a therapeutic and ethically sound relationship with patients.	-Simulations -Clinical round -Seminars -Lectures -Case presentation	-Global rating -Procedure/case presentation -Log book and Portfolios -Chick list
G. Perform the following oral communications: -Interpretation of results of different investigations AND discussion of different therapeutic options. -Health educations.		
H. Fill the following reports: -Patient medical report.		
I. Work effectively with others as a member or leader of a health care team as regard diagnosis and treatment of the conditions related to clinical haematology .		

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest.	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
K. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.		1. 360o global rating
L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Work effectively in different health care delivery settings and systems.	-Observation -Senior staff experience	1. 360o global rating
N. Practice cost-effective health care and resource allocation that does not compromise quality of care		1. Check list evaluation of live or recorded performance
O. Advocate for quality patient care and assist patients in dealing with system complexities		1. 360o global rating 2. Patient survey

P. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance		

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: Second part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
Unit 1				
UNIT 2,3	A-I	A-J	A-L	A-P
UNIT 4	A-I	A-J	A-L	A-P
UNIT 5	A-I	A-J	A-L	A-P
Unit 6	A-I	A-J	A- H	A-P
UNIT 7	A-H	A-J	A-H	A-P
UNIT 8	A-I	A-J	A- H	A-P

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Outpatient
3. Inpatient
4. Case presentation
5. Direct observation
6. journal club
7. Critically appraised topic.
8. Educational prescription
9. Clinical rounds
10. Clinical rotation
11. Senior staff experience
12. Case log
13. Observation and supervision
14. Written & oral communications
15. Simulation
16. Hand on work shop

17. Service teaching
18. Perform under supervision of senior staff
19. Postgraduate teaching

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs

7. Course assessment methods:

i. Assessment tools:

1. Oral examination
2. Clinical examination
3. Written examination
4. Objective structure clinical examination (OSCE)
5. Procedure/case Log book and Portfolios
6. Simulation
7. Record review (report)
8. Patient survey
9. 360o global rating
10. Check list evaluation of live or recorded performance
11. MCQ Exam

ii. Time schedule: At the end of second part

iii. Marks: 1200

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

1- Cecil – text book of Medicine, 22edition.
2- Oxford - text book of Medicine,
3- Davidson20 edition.
4- Current Medical Diagnosis & treatment, 2003.
5- Essential haematology 2006

iii. Recommended books

1. Harrisons - text book of Medicine ,15 edition
2. Macloid clinical methods.
3. Oxford clinical haematology

iv. Periodicals, Web sites, … etc

- American Journal of internal Medicine
- New England Journal of Medicine
- American Journal Of Gastroenterology
- BMJ
- Egyptian Heart Journal
- www.biomedcentral.com

v. Others :None

9. Signatures

- **Course Coordinator: Prof.Esam A. S.ElBeih**	**Head of the Department: Prof. Lobna El Tony**
Date: 20/2 / 2017	**Date: 20/2 / 2017**

ANNEX 2
Program Academic Reference Standards (ARS)

1- Graduate attributes for medical doctorate in Clinical haematology

***The Graduate (after residence training and medical doctorate years of study) must*:**

1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Clinical Haematology .

2- Have continuous ability to add knowledge to Clinical Haematology through research and publication.

3- Appraise and utilise relevant scientific knowledge to continuously update and improve clinical practice.

4- Acquire excellent level of medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific research.

5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.

6- Identify and create solutions for health problems in Clinical Haematology .

7- Acquire an in depth understanding of common areas of Clinical Haematology , from basic clinical care to evidence based clinical application, and possession of required skills to manage independently all problems in these areas.

8- Demonstrate leadership competencies including interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public.

9- Function as teacher in relation to colleagues, medical students and other health professions.

10- Master decision making capabilities in different situations related to Clinical Haematology .

11- Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.

12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.

13- Show model attitudes and professionalism.

14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Clinical Haematology or one of its subspecialties.

15- Use recent technologies to improve his practice in Clinical Haematology

16- Share in updating and improving clinical practice in Clinical Haematology .

2- Competency based Standards for medical doctorate in Clinical Haematology

22.1- Knowledge and understanding

By the end of the program, the graduate should demonstrate satisfactory knowledge and understanding of

2-1-A- Established, updated and evidence- based theories, basics and developments of Clinical Haematology and relevant sciences.

2-1-B- Basics, methods and ethics of medical research.

2-1-C- Ethical and medicolegal principles of medical practice related to Clinical Haematology .

2-1-D- Principles and measurements of quality in Clinical Haematology **.**

2-1-E- Principles and efforts for maintainace and improvements of public health.

2- Intellectual skills

By the end of the program, the graduate should be able to demonstrate the following

2-2-A- Application of basic and other relevant science to solve Clinical Haematology related Problems.

2-2-B- Problem solving based on available data.

2-2-C- Involvement in research studies related to Clinical Haematology .

2-2-D- Writing scientific papers.

2-2-E- Risk evaluation in the related clinical practice.

2-2-F- Planning for performance improvement in Clinical Haematology .

2-2-G- Creation and innovation in Clinical Haematology .

2-2-H- Evidence – based discussion.

2-2-I- Decision making in different situations related to Clinical Haematology .

2.3- Clinical skills

By the end of the program, the graduate should be able to

- ***Competency-based outcomes for Patient Care:-***

2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Clinical Haematology .

2-3-B- Master patient care skills relevant to Clinical Haematology for patients with all diagnoses and procedures.

2-3-C- Write and evaluate reports for situations related to the Clinical Haematology .

2.4- General skills

By the end of the program, the graduate should be able to

- ***Competency-based outcomes for Practice-based Learning and Improvement***

2-4-A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management

2-4-B- Use competently all information sources and technology to improve his practice.

2-4-C- Master skills of teaching and evaluating others.

- ***Competency-based objectives for Interpersonal and Communication Skills***

2-4-D-Master interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

- ***Competency-based objectives for Professionalism***

2-4-E-Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

- ***Competency-based objectives for Systems-based Practice:***

2-4-F-Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.

2-4-G- Participate in improvement of the education system.

2-4-H- Demonstrate skills of leading scientific meetings including time management

2-4-O- Demonstrate skills of self and continuous learning.

Annex 3, Methods of teaching/learning

Annex 3, Methods of teaching/learning

	Patient care	**Medical knowledge**	**Practice-based learning/ Improvement**	**Interpersonal and communication skills**	**Professionalism**	**Systems-based practice**
Didactic (lectures, seminars, tutorial)	X	X		X	X	X
journal club,	X	X	X			
Educational prescription	X	X	X	X	X	X
Present a case (true or simulated) in a grand round	X	X	X	X	X	
Observation and supervision	X		X	X	X	X
conferences		X	X	X		X
Written assignments	X	X	X	X	X	X
Oral assignments	X	X	X	X	X	X

Teaching methods for knowledge

- ❖ Didactic (lectures, seminars, tutorial)
- ❖ journal club
- ❖ Critically appraised topic
- ❖ Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues).
- ❖ Present a case (true or simulated) in a grand round
- ❖ Others

Teaching methods for patient care

- ❖ Observation and supervision /Completed tasks procedure/case logs
- ❖ On-the-job" training without structured teaching is not sufficient for this skill (checklists).
- ❖ Simulation is increasingly used as an effective method for skill/ teamwork training.

Teaching methods for other skills

- ❖ Written communication (e.g., orders, progress note, transfer note, discharge summary, operative reports, and diagnostic reports).

- ❖ Oral communication (e.g., presentations, transfer of care, interactions with patients, families, colleagues, members of the health care team) and/or non verbal skills (e.g., listening, team skills)

- ❖ Professionalism, including medical ethics, may be included as a theme throughout the program curriculum that includes

both didactic and experiential components (e.g., may be integrated into already existing small group discussions of vignettes or case studies and role plays, computer-based modules) and may be modeled by the faculty in clinical practice and discussed with the resident as issues arise during their clinical practice.

Annex 4, Assessment methods

Annex 4, ILOs evaluation methods for MD students.

Method	Practical skills	K	Intellectual	General skills			
	Patient care	K	I	Practice-based learning/ Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Record review	X	X	X		X	X	X
Checklist	X				X		
Global rating	X	X	X	X	X	X	X
Simulations	X	X	X	X	X	X	
Portfolios	X	X	X	X	X		
Standardized oral examination	X	X	X	X	X		X
Written examination	X	X	X	X			X
Procedure/ case log	X	X					
OSCE	X	X	X	X	X	X	X

Annex 4, Glossary of MD students assessment methods

- Record Review – Abstraction of information from patient records, such as medications or tests ordered and comparison of findings against accepted patient care standards.

- Chart Stimulated Recall – Uses the MD doctor's patient records in an oral examination to assess clinical decision-making.

- Mini clinical evaluation: Evaluation of Live/Recorded Performance (single event) – A single resident interaction with a patient is evaluated using a checklist. The encounter may be videotaped for later evaluation.

- Standardized Patients (SP) – Simulated patients are trained to respond in a manner similar to real patients. The standardized patient can be trained to rate MD doctor's performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MD doctor's performance.

- Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MD doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MD doctors.

- Procedure or Case Logs – MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.

- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.

- Case /problems – assess use of knowledge in diagnosing or treating patients or evaluate procedural skills.
- Models: are simulations using mannequins or various anatomic structures to assess procedural skills and interpret clinical findings. Both are useful to assess practice performance and provide constructive feedback.
- 360 Global Rating Evaluations – MD doctors, faculty, nurses, clerks, and other clinical staff evaluate MD doctors from different perspectives using similar rating forms.
- Portfolios – A portfolio is a set of project reports that are prepared by the MD doctors to document projects completed during the MD study years. For each type of project standards of performance are set. Example projects are summarizing the research literature for selecting a treatment option, implementing a quality improvement program, revising a medical student clerkship elective, and creating a computer program to track patient care and outcomes.
- Examination MCQ – A standardized examination using multiple-choice questions (MCQ). The in-training examination and written board examinations are examples.
- Examination Oral – Uses structured realistic cases and patient case protocols in an oral examination to assess clinical decision-making.
- Procedure or Case Logs – MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.

Annex 5,
Program evaluation tools

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	questionnaires	#
Alumni	questionnaires	#

Annex 6, Program Correlations:

مصفوفة توافق المعايير القومية القياسية العامة لبرامج الدكتوراه مع المعايير الأكاديمية المعتمدة من كلية الطب – جامعة أسيوط لدرجة الدكتوراه في أمراض الدم الاكلينيكية

I- General Academic Reference Standards (GARS) versus Program ARS

1- Graduate attributes

Faculty ARS	NAQAAE General ARS for Postgraduate Programs
1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Clinical Haematology .	1-إتقان أساسيات و منهجيات البحث العلمي
2- Have continuous ability to add knowledge new developments to Clinical Haematology through research and publication.	2-العمل المستمر علي الإضافة للمعارف في مجال التخصص
3- Appraise and utilise scientific knowledge to continuously update and improve clinical practice and relevant basic sciences.	3-تطبيق المنهج التحليلي والناقد للمعارف في مجال التخصص و المجالات ذات العلاقة
4- Acquire excellent level of medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific	4-دمج المعارف المتخصصة مع المعارف ذات العلاقة مستنبطا و مطورا للعلاقات البينية بينها
5- Function as a leader of a team to provide patient care that is appropriate, compassionate for dealing with effective and health Problems and health promotion. 7- Acquire an in depth understanding of common areas of speciality, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	5-إظهار وعيا عميقا بالمشاكل الجارية و النظريات الحديثة في مجال التخصص
6- Identify and create solutions for health problems in Clinical Haematology .	6-تحديد المشكلات المهنية و إيجاد حلولا مبتكرة لحلها

5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion. 7- Acquire an in depth understanding of common areas of Clinical Haematology , from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	7–إتقان نطاقا واسعا من المهارات المهنية في مجال التخصص
16- Share in updating and improving clinical practice in Clinical Haematology . 9- Function as teacher in relation to colleagues, medical students and other health professions.	8– التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية
15- Use recent technologies to improve his practice in Clinical Haematology .	9–استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
8- Demonstrate leadership competencies including interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public. 5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.	10–التواصل بفاعلية و قيادة فريق عمل في سياقات مهنية مختلفة
10- Master decision making capabilities in different situations related to Clinical Haematology .	11–اتخاذ القرار في ظل المعلومات المتاحة
11- Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.	12–توظيف الموارد المتاحة بكفاءة و تنميتها والعمل على إيجاد موارد جديدة

12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.	13–الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
13- Show model attitudes and professionalism.	14–التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة
14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Clinical Haematology or one of its subspecialties. 15- Use recent technologies to improve his practice in Clinical Haematology ..	15–الالتزام بالتنمية الذاتية المستمرة و نقل علمه و خبراته للآخرين

2- Academic standards

Faculty ARS	NAQAAE General ARS for Postgraduate Programs
2.1. A- Established, updated and evidence- based theories, basics and developments of Clinical Haematology and relevant sciences.	2-1-أ- النظريات و الأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة
2.1. B- Basic, methods and ethics of medical research.	2-1-ب –أساسيات و منهجيات و أخلاقيات البحث العلمي و أدواته المختلفة
2.1. C- Ethical and medicologal principles of medical practice related to Clinical Haematology .	2-1-ج- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
2.1. D- Principles and measurements of quality in Clinical Haematology .	2-1-د مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
2.1. E- Principles and efforts for maintains and improvements of public health.	2-1-هـ – المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها
2.2. A- Application of basic and other relevant science to solve Clinical Haematology related problems.	2–2–أ –تحليل و تقييم المعلومات في مجال التخصص و القياس عليها و الاستنباط منها
2.2.B- Problem solving based on available data.	2–2–ب –حل المشاكل المتخصصة استنادا علي المعطيات المتاحة
2.2.C- Involvement in research studies related to Clinical Haematology .	2–2–ج –إجراء دراسات بحثية تضيف إلى المعارف
2.2. D- Writing scientific papers.	2–2–د– صياغة أوراق علمية
2.2. E- Risk evaluation in the related clinical practice	2–2—هـ تقييم المخاطر في الممارسات المهنية
2.2.F- Planning for performance improvement in Clinical Haematology .	2–2–و –التخطيط لتطوير الأداء في مجال التخصص

2-2-G- Creation and innovation in the Clinical Haematology .	2-2-ز- الابتكار /الإبداع
2.2. H- Evidence – based discussion.	2-2-ح- الحوار والنقاش المبني علي البراهين والأدلة
2.2.I- Discussion making in different situations related to Clinical Haematology .	2-2-ط -اتخاذ القرارات المهنية في سياقات مهنية مختلفة
2.3. A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Clinical Haematology . 2.3. B- Master patient care skills relevant to Clinical Haematology or patients with all diagnoses and procedures.	2-3-أ -إتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص
2.3. C- Write and evaluate reports for situations related to the field of Clinical Haematology .	2-3-ب- كتابة و تقييم التقارير المهنية.
2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	2-3-ج -تقييم و تطوير الطرق و الأدوات القائمة في مجال التخصص
2.4.B- Use competently all information sources and technology to improve his practice.	2-3-د - استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية
2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management 2.4.G- Participate in improvement of the education system.	2-3-هـ -التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين

II-Program ARS versus program ILOs

Comparison between ARS- ILOS for medical doctorate for Clinical Haematology

(ARS)	(ILOs)
2-1- Knowledge and understanding	***2-1- Knowledge and understanding***
2-1-A- Established, updated and evidence-based Theories, Basics and developments of Clinical Haematology and relevant sciences.	**2-1-A**- Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio behavioral science relevant to his specialty as well as the evidence – based application of this knowledge to patient care.
2-1-B Basic, methods and ethics of medical research.	**2-1-B-** Explain basics, methodology, tools and ethics of scientific medical, clinical research.
2-1-C- Ethical and medicologal principles of medical practice related to Clinical Haematology field.	**2-1-C-** Mention ethical, medico logical principles and bylaws relevant to his practice in the field of Clinical Haematology .
2-1-D- Principles and measurements of quality in the Clinical Haematology field.	**2-1-D-** Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of Clinical Haematology .
2-1-E-Principles and efforts for maintains and improvements of public health.	**2-1-E-** Mention health care system, public health and health policy, issues relevant to this specialty and principles and methods of system – based improvement of patient care in common health problems of the field of Clinical Haematology
***2-2- Intellectual skills*:**	***2-2- Intellectual skills:***

2-2-A-Application of basic and other relevant science to solve Clinical Haematology related problems.	**2-2-A-** Apply the basic and clinically supportive sciences which are appropriate to Clinical Haematology related conditions / problem / topics.
2-2-B-Problem solving based on available data.	**2-2-B-** Demonstrate an investigatory and analytic thinking "problem – solving "approaches to clinical situation related to Clinical Haematology .
2-2-C- Involvement in research studies related to the Clinical Haematology .	**2-2-C-** Plan research projects.
2-2-D Writing scientific papers.	**2-2-D-** Write scientific paper.
2-2-E-Risk evaluation in the related clinical practice.	**2-2-E-** Participate in clinical risk management as a part of clinical governance.
2-2-F-Planning for performance improvement in the Clinical Haematology field.	**2-2-F-** Plan for quality improvement in the field of medical education and clinical practice in Clinical Haematology ..
2-2-G-Creation and innovation in the specialty field.	**2-2-G-** Create / innovate plans, systems, and other issues for improvement of performance in his practice.
2-2-H-Evidence – based discussion.	**2-2-H-** Present and defend his / her data in front of a panel of experts.
2-2-I-Decision making in different situations related to Clinical Haematology fields.	**2-2-I-** Formulate management plans and alternative decisions in different situations in the field of the Clinical Haematology .

continuous (ARS)	continuous (ILOs)
2-3- Clinical skills:	***2/3/1/Practical skills (Patient care :)***
2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in his field of practice.	**2-3-1-A-** Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. ***p.s.*** Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.
2-3-B- Master patient care skills relevant to Clinical Haematology for patients with all diagnoses and procedures.	**2-3-1-B-** Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to Clinical Haematology .
	2-3-1-C- Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.
	2-3-1-D- Perform diagnostic and therapeutic procedures considered essential in the field of Clinical Haematology
	2-3-1-E- Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.
	2-3-1-F- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in the Clinical Haematology related

	situations. **2-3-1-G-** Gather essential and accurate information about patients of the Clinical Haematology related conditions. **2-3-1-H** Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for the Clinical Haematology related conditions. **2-3-1-I-** Develop and carry out patient management plans for Clinical Haematology related conditions. **2-3-1-J-** Counsel and educate patients and their families about Clinical Haematology related conditions. **2-3-1-K-** Use information technology to support patient care decisions and patient education in all Clinical Haematology related clinical situations. **2-3-1-L-** Perform competently all medical and invasive procedures considered essential for the Clinical Haematology related conditions / area of practices. **2-3-1-M-** Provide health care services aimed at preventing the Clinical Haematology related health problems. **2-3-1-N-** Lead health care professionals, including those from other disciplines, to provide patient-focused care in Clinical Haematology related conditions**.**

2-3-C- Write and evaluate reports for situations related to the field of Clinical Haematology .	**2-3-1-O-** Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive timely and legible medical records).
2-4- General skills **2-4-A-** Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	***2/3/2 General skills*** **2-3-2-A-** Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of Clinical Haematology . **2-3-2-B-** Appraise scientific evidence. **2-3-2-C-** Continuously improve patient care based on constant self-evaluation and life-long learning. **2-3-2-D**. Participate in clinical audit and research projects. **2-3-2-E-** Practice skills of evidence-based Medicine (EBM). **2-3-2-G-** Design logbooks. **2-3-2-H-** Design clinical guidelines and standard protocols of management. **2-3-2-I-** Appraise evidence from scientific studies related to the patients' health problems.

2-4-B- Use competently all information sources and technology to improve his practice.	**2-3-2-J-** Apply knowledge of study designs and statistical methods to the appraisal of clinical studies. **2-3-2-K**- Use information technology to manage information, access on-line medical information; for the important topics.
2-4-C- Master skills of teaching and evaluating others.	**2-3-2-F-** Educate and evaluate students, residents and other health professionals.
2-4-D- Master interpersonal and communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.	**2-3-2-L**- Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including:- • Present a case. • Write a consultation note. • Inform patients of a diagnosis and therapeutic plan Completing and maintaining comprehensive. • Timely and legible medical records. • Teamwork skills. **2-3-2-M-** Create and sustain a therapeutic and ethically sound relationship with patients. **2-3-2-N**- Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills. **2-3-2-O-** Work effectively with others as a member or leader of a health care team or other professional group.
2-4-E- Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical	**2-3-2-P-** Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.

principles, and sensitivity to a diverse patient population.	**2-3-2-Q-** Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. **2-3-2-R-** Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.
2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value. **2-4-G**- Participate in improvement of the education system.	**2-3-2-S-** Work effectively in health care delivery settings and systems related to Clinical Haematology including good administrative and time management. **2-3-2-T-** Practice cost-effective health care and resource allocation that does not compromise quality of care. **2-3-2-U-** Advocate for quality patient care and assist patients in dealing with system complexities. **2-3-2-V-** Design, monitor and evaluate specification of under and post graduate courses and programs.
2-4-H- Demonstrate skills of leading scientific meetings including time management	**2-3-2-W-** Act as a chair man for scientific meetings including time management **2-3-2-S-** Work effectively in health care delivery settings and systems related to Clinical Haematology including good administrative and time management.
2-4-O- Demonstrate skills of self and continuous learning.	From A –H.

III-Program matrix
Knowledge and understanding

Course	Program cover ILOs				
	2/1/A	2/1/B	2/1/C	2/1/D	2/1/E
Course 1 : Medical statistics		✓			
course 2 : Research Methodology		✓			
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research			✓		
Course 4 -Pathology of blood diseases & Advanced microbiology and immunology	✓				
Course 5- -Genetics and advanced molecular biology	✓				
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)	✓				
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs								
	2/2/A	2/2/B	2/2/C	2/2/D	2/2/E	2/2/F	2/2/G	2/2/H	2/2/I
Course 1 : Medical statistics			✓	✓				✓	
course 2 : Research Methodology			✓	✓				✓	
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research								✓	
Course 4 -Pathology of blood diseases & Advanced microbiology and immunology	✓	✓							
Course 5- -Genetics and advanced molecular biology	✓	✓							
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)	✓	✓							
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program covered ILOs							
	2/3/1/ A	2/3/1/ B	2/3/1/ C	2/3/1/ D	2/3/1/ E	2/3/1/F	2/3/1/ G	2/3/1/ H
Course 1 : Medical statistics								
course 2 : Research Methodology								
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research				✓				✓
Course 4 - Pathology of blood diseases & Advanced microbiology and immunology								
Course 5- - Genetics and advanced molecular biology								
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)								
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program Cover ILOs						
	2/3/1/I	2/3/1/J	2/3/1/K	2/3/1/L	2/3/1/M	2/3/1/N	2/3/1/0
Course 1 : Medical statistics							
course 2 : Research Methodology							
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research	✓	✓					✓
Course 4 -Pathology of blood diseases & Advanced microbiology and immunology							
Course 5- -Genetics and advanced molecular biology							
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)							
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program cover ILOS							
	2/3/2/A	2/3/2/B	2/3/2/C	2/3/2/D	2/3/2/E	2/3/2/F	2/3/2/G	2/3/2/H
Course 1 : Medical statistics		✓						
course 2 : Research Methodology		✓		✓	✓			
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research								
Course 4 - Pathology of blood diseases & Advanced microbiology and immunology								
Course 5- - Genetics and advanced molecular biology								
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)								
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓	✓

General skills

Course	Program cover ILOS							
	2/3/2/I	2/3/2/J	2/3/2/K	2/3/2/L	2/3/2/M	2/3/2/N	2/3/2/O	2/3/2/P
Course 1 : Medical statistics	✓	✓	✓					
course 2 : Research Methodology	✓	✓						
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research				✓				
Course 4 - Pathology of blood diseases & Advanced microbiology and immunology			✓					✓
Course 5- - Genetics and advanced molecular biology			✓					✓
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)			✓					✓
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program cover ILOS						
	2/3/2/Q	2/3/2/R	2/3/2/S	2/3/2/T	2/3/2/U	2/3/2/V	2/3/2/W
Course 1 : Medical statistics							
course 2 : Research Methodology							
course 3 : Medicolegal Aspects & Ethics in Medical Practice and Scientific Research							
Course 4 -Pathology of blood diseases & Advanced microbiology and immunology			✓				
Course 5- -Genetics and advanced molecular biology			✓				
Course 6: Basis of therapy of malignant blood diseases (Radiotherapy and chemotherapy)			✓				
Course 7 : Advanced Haematology	✓	✓	✓	✓	✓	✓	✓