هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Hematology & immunology**
Course Code:	**351 hem-3**
Program:	**Bachelor of Medicine, Bachelor of Surgery**
Department:	**N/A**
College:	**Medicine**
Institution:	**Najran University**

A. Course Identification

1. Credit hours:3(2+1)
2. Course type **a.** University ☐ College ☐ Department ☐ Others ☑ **PROGRAM** **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: **level 8 ,3rd year**
4. Pre-requisites for this course (if any)**:** **Histology-2**
5. Co-requisites for this course (if any)**:** NONE

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	36	55%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**	30	45%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	28
2	**Laboratory/Studio**	30
3	**Others** (specify)seminar	4
4	**TBL**	4
	Total	66

B. Course Objectives

1. Course Description

This course concerned with studying the hematopoietic related diseases that affect the blood cells, such as anemia, benign and neoplastic white blood cells disorders, coagulopathy, and thrombosis besides a comprehensive study of the immune system and how it defends against the invading microorganisms, immune surveillance, autoimmune disease and immunodeficiency disorders.

2. Course Main Objective

✓ Describe the common blood disorders etiology, pathogenesis, pathological changes and how correlates them to clinical features and select the appropriate lab tests to reach diagnosis.

✓ Understand the immune system & how it fights all types of microbes & tumor cells and the diseases result from abnormal immune reactions

C. Course Content

No	List of Topics	Contact Hours
	1- Introduction to immunology (discussion of course objective and content& (definitions, general properties, component of the immune system **(Lecture) immune.**	1
	Introduction to hematology disorders and investigations in hematology. Distribution and discussion of course objective Iron deficiency anemia **(Lecture) Hem**.	1
	Hematopoiesis & Blood indices (Revision). Diagnostic techniques in hematopathology. Iron deficiency anemia. Anemia of chronic diseases. Sideroblastic anemia **(Practical)**	2
	1- Innate immunity (The early defense against infection) **Lecture immune** 2- Megaloblastic anemia (Iron over load, polycythemia, hemochromatosis) **Lecture Hem** 3- Megaloblastic anemia Iron overload. Anemia of chronic diseases Sideroblastic anemia **(Practical)**	1 1 2
	1- Antigens & Antigen Recognition. **lecture immune** 2- Hemolytic anemias. **Lecture Hem** 3- Agglutination &precipitation reactions. Congenital Hemolytic anemias **Practical**	1 1 2
	1. Humoral Immune Response **Lecture immune** 2. Hemolytic anemias: (congenital- Hemoglobinopathies, membrane defects enzyme defects) **Lecture Hem** 3. Infectious Diseases Serology Post streptococcal infection (ASO) (RF) **Practical. (Test-1 Practical)**	1 1 2
	1. Antibodies (Production, structure, classes, function.) **lecture immune** 2. Cytopenia, Aplastic anemias. **lecture Hem** 3. Quantitation of immunoglobulin (Immunoelectrophresis), Cytopenia, Aplastic anemias. **Practical**	1 1 2
	1. Complement System (Pathways, activation, Function, Regulation of complement). **lecture immune**) 2**. Non immune related hemolytic anemias** **3. TBL1** (Immune related hemolytic Anemias) 4. Complement Assay Test. **Practical**	1 1 2 2
	1. Cytokines **lecture immune** 2. Benign White blood cells disorders (leucocytosis, leukemoid reaction) **lecture Hem** 3. Midterm. **Practical** + mcqs	1 1 2
	1. Introduction to leukemia and acute &chronic leukemia **Lecture Hem** 2. Cell Mediated Immune Response **Lecture immune** 3. Benign White blood cells disorders (leucocytosis, leukemoid reaction) Practical, Leukemia. **Practical**	1 1 2
	1. Protective immunity (Vaccine constituent, Adjuvant, virus vaccine, Bacterial Vaccine) **Seminar immune** 2. Lymphoma (Hodgkin) & non Hodgkin **Lecture Hem** 3. (autoimmune disease) Test -2 lecture **4. Practical** lymphoma	2 1 1 2

	1. Immunological Tolerance &Autoimmunity. **Lecture immune** 2. Multiple myeloma Paraproteinemia **Lecture Hem** 3. Paraproteinemia **Practical**	1 1 2
	1. **TBL2** Disorders caused by immune responses (Hypersensitivity) (Hypersensitivity types, disease caused by antibodies and antigen complexes, Disease caused by Lymphocytes) 2. Myeloproliferative disorders. **Lecture Hem** 3. Myeloproliferative disorders. **Practical**	2 1 2
	1. Immune Response against Tumors &Transplantation. **lecture immune** 2. Abnormal hemostasis (bleeding and thrombosis) **Seminar. Hem** 3. Tissue Typing and Coagulation screening tests **Practical**	1 2 2
	1. Congenital & Acquired Immunodeficiency diseases caused by Defective Immune Responses **Lecture immune** 2. Platelets disorders **Lecture Hem**/Test 3 3. Enzyme linked Immune sorbent Assay (ELISA)& Immunofluorescence Tests **Practical**	1 1 2
	1. Review. **Lecture immune** 2. Coagulation disorders(hemophilia, Von willbrand disease, afibrinogenemia and others). **Lecture Hem** 3. Cellular Assay (Lymphocyte Subset Enumeration, Lymphocyte Phenotyping in HIV Infection, Cell Separation &Viability **Practical** 4. Coagulation disorders (hemophilia, Von willbrand disease , afibrinogenemia and others) **Lecture hem**	1 1 2 1
	1. Blood transfusion indications and reactions, blood parasites and pregnancy. **Lecture HEM** 2. Flow cytometry & RIA: Demonstration /Problems Interpretation of lab investigations **Practical**	1 2
	Total contact hours including practical sessions	66 hours

D. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1.	Midterm written & practical exam	6th week	25%
2.	Seminar	4th, 8th	6%
3.	TBL iRAT & gRAT	3th ,7th	6%
4.	Practical logbook	All practical sessions	3%
5.	Final written exam	12th -13th(Exam week	40%
6.	Final practical OSPE	12th -13th(Exam weeks	20%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Essentials of clinical hematology,Hoffbrand

Essential References Materials	✓ Robbins basic pathology, ✓ Dacie practical hematology(last edition) ✓ Abbas&Lichtman:Basic immunologySauders(last edition) ✓ Pathological basis of diseases ✓ Wintrob Clinical hematology ,American journal of hematology, ✓ Molecular microbiology ✓ Atlas of hematology Elsevier NarinerR&HelbertM:Immunology for medical students
Electronic Materials	✓ Utta webpath ✓ Najran university blackboard ✓ Najran university digital library
Other Learning Materials	✓ Atlas of hematology (electronic library) Journals of clinical hematology (digital library:springer, weily,),pubmed puplications

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Class Room for 30 students, lab with 30 lab seats,
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, net connection,
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Slides, multi-headed teaching microscope, immunodiffusion tests

G. Specification Approval Data

Council / Committee	PATHOLOGY DEPARTEMNT
Reference No.	3/3/44
Date	07/03/1444

course coordinator
Dr sumiah

PATHOLOGY DEPARTEMNT HEAD

Dr. Soliman Alsaiari