



Course Specifications

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|----------------------|--|
| Course Title: | Hematology-Oncology Block |
| Course Code: | HEM352 |
| Program: | Bachelor of Medicine, Bachelor of Surgery (MBBS) |
| Department: | NA |
| College: | College of Medicine |
| Institution: | Alfaisal University |

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A. Course Identification

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|--|
| 1. Credit hours: 2 (2+0+0) |
| 2. Course type |
| a. University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Others <input type="checkbox"/> |
| b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/> |
| 3. Level/year at which this course is offered: Sem 5, Year 3 |
| 4. Pre-requisites for this course (if any): Sem 3 and 4 |
| 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 – including PBL, LGD, E-Learning | 39 | 100% |

7. Contact Hours (based on academic semester)

| No | Activity | Contact Hours |
|----|-------------------|---------------|
| 1 | Lecture | 39 |
| 2 | Laboratory/Studio | |
| 3 | Tutorial | |
| 4 | Others (specify) | |
| | Total | 39 |

B. Course Objectives and Learning Outcomes

1. Course Description

This hematology course is directed towards the learning and understanding of pathological disorders of the hematology system, including benign, malignant, and infectious conditions. It aims at a multidisciplinary-approach involving hematopathology, pediatric and adult hematology/oncology, pharmacology, microbiology, and immunology to attain the maximum benefit of integration. It covers concepts of blood cell development and abnormal blood cell morphology in all types of hematologic diseases. Different types of anemia including iron deficiency anemia, megaloblastic anemia, hemolytic and non-hemolytic anemias, thalassemia, sickle cell disease will be also explained. The methods of microscopic analysis of hemoglobinopathies, methods of blood grouping and blood transfusion, and its complications will be discussed through lectures and large group discussions. The course will give an overall view of bone marrow failure, stem cell transplantation, and hematological malignancies including leukemia, lymphomas, myelodysplastic and myeloproliferative disorders, and multiple myeloma. It will also cover topics of coagulation factor deficiencies, platelets, and common thrombotic disorders. Also, the biology of heritable immunodeficiencies and the principles of tissue transplantation and rejection will be covered. The course will also describe the pathobiology of malaria, systemic viral, bacterial and fungal infections.

2. Course Main Objective

This hematology course is directed towards the learning and understanding of pathological disorders of the hematology system, including benign, malignant, and infectious conditions.

3. Course Learning Outcomes

| CLOs | | Aligned PLOs |
|----------|---|--------------|
| 1 | Knowledge and Understanding | |
| 1.1 | Review hematopoiesis and red cell structure, function and metabolism. | PLO1 |
| 1.2 | Describe the pathophysiology, clinical features, diagnostic workup and management of red cell disorders and benign and malignant white cell disorders, bleeding disorders and thrombophilia and diseases of the spleen. | PLO4,5,6,7 |
| 1.3 | Interpret the clinical and laboratory information to understand and classify different types of anemia. | PLO4,5,6,7 |
| 1.4 | Describe the mechanisms of hemostasis and thrombosis and correlate it with the interpretation of coagulation tests and the role of coagulants and anticoagulants in the treatment of various diseases. | PLO4,5,6,7 |
| 1.5 | Discuss the basis of blood grouping and blood transfusion and discuss complications of blood transfusion. | PLO4,5,6,7 |
| 1.6 | Identify the different types of stem cell transplant (SCT) currently available and the indications for SCT. | PLO4,5,6,7 |
| 1.7 | Discuss infections such as HIV, Malaria and systemic fungal infections and their treatment modalities. | PLO4,5,6,7 |
| 2 | Skills : | |
| 2.1 | Interpretation of common laboratory investigations in various hematological diseases | PLO5 |
| 2.2 | Identification of various normal and abnormal blood cells and their appearance and interpretation in various hematological diseases | PLO5 |
| 3 | Values: | |
| 3.1 | Adhere to the attendance policy. | |
| 3.2 | Maintain professional conduct with colleagues, faculty, and staff. | PLO24/27 |

C. Course Content

| No | List of Topics | Contact Hours |
|----|--|---------------|
| 1 | Hematopoiesis | 1 |
| 2 | Hemoglobinopathies and sickle cell disorders | 1 |
| 3 | Classification of anemias | 1 |
| 4 | Nutritional Anemias | 1 |
| 5 | Bone marrow failure syndromes | 1 |
| 6 | Hemolytic anemias | 1 |
| 7 | Bleeding disorders | 1 |
| 8 | Spleen and Misc. | 1 |
| 9 | Leukopenia and leukocytosis/ WBC disorders | 1 |
| 10 | Myeloproliferative disorders | 1 |

| | | |
|--------------|---|-----------|
| 11 | Molecular basis of hemoglobinopathies | 1 |
| 12 | Lymph nodes disorders and lymphoma | 2 |
| 13 | Overview of blood banking | 1 |
| 14 | Tumour lysis syndrome and haematological emergencies | 1 |
| 15 | Stem cell transplant | 1 |
| 16 | Thrombophilias and antiphospholipid syndromes | 1 |
| 17 | Acute leukemias and myelodysplastic syndromes | 1 |
| 18 | Primary immunodeficiencies | 1 |
| 19 | Secondary immunodeficiencies | 1 |
| 20 | Hematinics and chelating agents | 1 |
| 21 | Systemic viral infections | 2 |
| 22 | HIV | 1 |
| 23 | Malaria | 1 |
| 24 | Antiretroviral drugs | 1 |
| 25 | Chemotherapeutic agents | 1 |
| 26 | Febrile neutropenia | 1 |
| 27 | Brucellosis | 1 |
| 28 | Basis of hemostasis and thrombosis (online only - eLearning) | 3 |
| 29 | PBL 1 Aplastic anemia | 2 |
| 30 | PBL 2 Chronic myeloid leukemia | 2 |
| 31 | LGD 1 Morphology of peripheral blood, Hb electrophoresis and Hemoglobinopathies | 1 |
| 32 | LGD 2 Coagulation disorders | 1 |
| 33 | LGD 3 Bone marrow morphology | 1 |
| Total | | 39 |

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|------------|---|----------------------|---|
| 1.0 | Knowledge and Understanding | | |
| 1.1 | Review hematopoiesis and red cell structure, function and metabolism. | Lectures | Summative assessment |
| 1.2 | Describe the pathophysiology, clinical features, diagnostic workup and management of red cell disorders and benign and malignant white cell disorders, bleeding disorders and thrombophilia and diseases of the spleen. | Lectures, PBLs, LGDs | Continuous, formative, and summative assessment |
| 1.3 | Interpret the clinical and laboratory information to understand and classify different types of anemia. | Lectures, PBLs, LGDs | Continuous, formative, and summative assessment |
| 1.4 | Describe the mechanisms of hemostasis and thrombosis and correlate it with the interpretation of coagulation tests and the role of | Lectures, LGDs | Formative and summative assessment |

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|------------|--|---------------------|------------------------------------|
| | coagulants and anticoagulants in the treatment of various diseases. | | |
| 1.5 | Discuss the basis of blood grouping and blood transfusion and discuss complications of blood transfusion. | Lectures | Summative assessment |
| 1.6 | Identify the different types of stem cell transplant (SCT) currently available and the indications for SCT. | Lectures | Summative assessment |
| 1.7 | Discuss infections such as HIV, Malaria and systemic fungal infections and their treatment modalities. | Lectures | Summative assessment |
| 2.0 | Skills | | |
| 2.1 | Interpretation of common laboratory investigations in various hematological diseases. | Lectures, LGDs | Formative and summative assessment |
| 2.2 | Identification of various normal and abnormal blood cells and their appearance and interpretation in various hematological diseases. | Lectures, LGDs | Formative and summative assessment |
| 3.0 | Values | | |
| 3.1 | Adhere to the attendance policy. | | Continuous assessment |
| 3.2 | Maintain professional conduct with colleagues, faculty, and staff. | | Continuous assessment |

2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|------------------|----------|--------------------------------------|
| 1 | PBL | Weekly | 5% |
| 2 | Final Exam | 3 | 95% |

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

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

The CoM program established its own mentorship program that employs all full-time faculty as mentors. Through this program, every medical student in the program is assigned a mentor at the beginning of their first semester of studies. The program has a broad scope covering academic advising and counseling. The mentors handle all aspects related to academic advising, including academic planning, academic performance review, advice on course drop or withdrawal, study skills, and time management.

F. Learning Resources and Facilities

1. Learning Resources

| | |
|---------------------------------------|--|
| Required Textbooks | <ul style="list-style-type: none"> Robbins and Cotran Pathologic basis of disease TENTH Edition |
| Essential References Materials | <p>Hematology / Oncology References:</p> <ul style="list-style-type: none"> Robbins and Cotran Pathologic basis of disease tenth Edition <p>Pharmacology References:</p> <ol style="list-style-type: none"> Basic & Clinical Pharmacology: Bertram Katzung (Author), Susan Masters (Author), Anthony Trevor Pharmacology: R. A. Harvey and P. C. Champe, Lippincott's Illustrated, 4th Edition |
| Electronic Materials | PowerPoint presentations uploaded on Alfaisal E-learning Portal |
| Other Learning Materials | <p>E-Learning Web-Sites:</p> <ul style="list-style-type: none"> www.hematology.org teachingcases.hematology.org library.med.cornell.edu/resources/descriptions/ash.html www.bloodline.net Hematology 2009 - American Society of Hematology 2009 - free books online Medical Search Engines PubMed <p>Sites Specifically for Med Students:</p> <ul style="list-style-type: none"> MedicalStudent.com Medscape Med Students eMedicine.medscape.com |

2. Facilities Required

| Item | Resources |
|--|---|
| <p>Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> | Classrooms |
| <p>Technology Resources (AV, data show, Smart Board, software, etc.)</p> | AV (Audio-Visual), Smartboard, Moodle (E-learning Management) |
| <p>Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)</p> | |

G. Course Quality Evaluation

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|--------------------------------------|------------|--------------------|
| Course and Faculty Evaluation Survey | Students | Survey |

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

| | |
|----------------------------|--|
| Council / Committee | |
| Reference No. | |
| Date | |