

Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIED SCIENCES



Faculty of Medicine

Bachelor Program of Medicine and Surgery

Course Specification of Haemato-lymphatic System Course Code. (A21P221)

2023



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

| Prepared by: | Reviewed by: | Head of department | Quality Unit: | Dean of Medicine Faculty | Center of Development and Quality Assurance Dean |
|-----------------|-----------------------|--------------------|--------------------------|--------------------------|--|
| Dr. Ahmed Hudna | Dr. Ghamdan al-Tahesh | | Dr. Fadhl Shujaa Al-deen | Dr. Salwa Al-Ghomeri | |

I. General Information:

| | | | | | | |
|-----|--|--|----------------------|----------------------|-------------------------|----------|
| 1. | Course Title: | Haemato-lymphatic System | | | | |
| 2. | Course Code: | A21P221 | | | | |
| 3. | Credit Hours: | Credit Hours | Theory Contact Hours | | Practical Contact Hours | |
| | | | Lecture | Tutorial/ Seminar | Lab | Clinical |
| | | 5 | 4 | -- | 2 | -- |
| 4. | Level/ Semester at which this Course is offered: | 2 nd Level / 2 nd Semester | | | | |
| 5. | Pre –Requisite (if any): | Physiology, Biochemistry, Anatomy Histology, Pathology and Pharmacology. | | | | |
| 6. | Co –Requisite (if any): | None | | | | |
| 7. | Program (s) in which the Course is Offered: | Bachelor of Medicine and surgery | | | | |
| 8. | Language of Teaching the Course: | English | | | | |
| 9. | Location of Teaching the Course: | Faculty of Medicine | | | | |
| 10. | Prepared by: | Dr. Ahmed Hudna | | | | |
| 11. | Date and Number of Approval by Council: | 2023 | | | | |

II. Course Description:

The aim of blood course is to provide students with major basic and clinical concepts related to blood. Blood course introduces information about many topics including hematopoiesis, functions of blood components, hemostasis, causes, clinical features, diagnosis, treatment and prognosis of

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blood diseases. These topics will be covered by physiology, pathology, pharmacology, microbiology, medicine and pediatrics.

| III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to: | | Referenced PILOs | | |
|---|--|-------------------|----|--|
| A. Knowledge and Understanding: | | I, P or M/A | | |
| a1 | Explain the various constituents of blood, their function, hematopoiesis, hemostasis, blood groups and cross matching. | I | A1 | Describe the general and basic sciences related to human body structure and functions with emphasis on normal and abnormal conditions. |
| a2 | Describe infectious diseases such as bacteria, malaria, leishmania, and toxoplasmosis | A | A3 | Explain the pathological and pathogenesis changes in various diseases, and their etiological triggers including genetic, developmental, infectious, metabolic, endocrinal, autoimmune, neoplastic, traumatic, degenerative and occupational factors. |
| B. Intellectual Skills: | | | | |
| b1 | Distinguish between physiological and pathological performance of body cells. | I | B1 | Compare between normal and abnormal conditions and predict the appropriate treatment or intervention. |
| b2 | Integrate the clinical features with laboratory data to recognize and classify common blood disorders. | P | B2 | Analyze and interpret the finding from history, clinical examination and investigations to propose a diagnosis and develop a shared management plan for common acute, chronic and urgent physical and mental health presentations. |

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| C. Professional and Practical Skills: | | | | |
|---|--|---|----|---|
| c1 | Practice medical history taking, physical/clinical examination and laboratory investigations for common blood disorders. | P | C1 | Perform complete clinical examination and precise investigations to reach the final diagnosis. |
| c2 | Demonstrate the normal and abnormal blood cells and blood parasites in common blood disorders | A | C3 | Carry out routine medical procedure and demonstrate the ability of using common medical tools required for diagnosis and management with highly qualified competency. |
| D. Transferable Skills: | | | | |
| d1 | Use the information technology and internet resources efficiently for self-learning and gaining up-to-date information in the areas of interest. | P | D1 | Communicate with professionals, patients, their families and the community through verbal, written and other non-verbal means. |
| d2 | Act independently or collaboratively as a member of teamwork and communicate effectively with others. | A | D2 | Work individually or in a team and develop lifelong learning using up to date technology that help in understanding the diseases and its control and prevention. |
| I= Introduced, P=Practiced or M/A= Mastered/Advanced | | | | |

| (A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods: | | |
|---|---|--|
| Course Intended Learning Outcomes | Teaching Strategies | Assessment Strategies |
| a1 | <ul style="list-style-type: none"> ▪ Interactive lectures ▪ Discussion ▪ Office hours ▪ Self-learning | <ul style="list-style-type: none"> ▪ Quizzes ▪ Final written exam ▪ Oral discussion |

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|----|---|--|--|
| a2 | Describe infectious diseases such as bacteria, malaria, leishmania, and toxoplasmosis | <ul style="list-style-type: none"> ▪ Interactive lectures ▪ Discussion ▪ Case studies ▪ PBL ▪ Office hours ▪ Self learning | <ul style="list-style-type: none"> ▪ Quizzes ▪ Final written exam ▪ Oral discussion |
|----|---|--|--|

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:

| Course Intended Learning Outcomes | Teaching Strategies | Assessment Strategies | |
|-----------------------------------|--|--|---|
| b1 | Distinguish between physiological and pathological performance of body cells. | <ul style="list-style-type: none"> ▪ Interactive lectures ▪ Seminars ▪ Discussion ▪ Case studies | <ul style="list-style-type: none"> ▪ Final written exam ▪ Final practical exam ▪ Oral discussion |
| b2 | Integrate the clinical features with laboratory data to recognize and classify common blood disorders. | <ul style="list-style-type: none"> ▪ Interactive lectures ▪ Seminars ▪ Discussion ▪ Case studies | <ul style="list-style-type: none"> ▪ Final written exam ▪ Final practical exam ▪ Oral discussion |

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:

| Course Intended Learning Outcomes | Teaching Strategies | Assessment Strategies | |
|-----------------------------------|--|--|--|
| c1 | Practice medical history taking, physical/clinical examination and laboratory investigations for common blood disorders. | <ul style="list-style-type: none"> ▪ Lab experiments ▪ Case studies ▪ PBL | <ul style="list-style-type: none"> ▪ Final practical exam ▪ OSPE |
| c2 | Demonstrate the normal and , abnormal blood cells and blood parasites in common blood disorders | <ul style="list-style-type: none"> ▪ Case studies ▪ PBL | <ul style="list-style-type: none"> ▪ Final practical exam ▪ OSPE |

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

| Course Intended Learning Outcomes | Teaching Strategies | Assessment Strategies |
|-----------------------------------|---------------------|---|
| d1 | Use the information | <ul style="list-style-type: none"> ▪ Seminars ▪ Oral discussion |

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|----|--|--|---|
| | technology and internet resources efficiently for self-learning and gaining up-to-date information in the areas of interest. | <ul style="list-style-type: none"> ▪ Discussion ▪ Case studies ▪ Self-learning ▪ PBL | <ul style="list-style-type: none"> ▪ Homework ▪ Teamwork |
| d2 | Act independently or collaboratively as a member of teamwork and communicate effectively with others. | <ul style="list-style-type: none"> ▪ Seminars ▪ Discussion ▪ Case studies ▪ Self-learning ▪ PBL | <ul style="list-style-type: none"> ▪ Oral discussion ▪ Homework ▪ Teamwork |

IV. Course Contents:

A. Theoretical Aspect:

| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due | Learning Outcomes (CILOs) |
|-----|-------------------|---|---------------|---|---------------------------|
| 1 | Physiology | Introduction & general functions | 2 | 1 st , 2 nd , 3 rd , 4 th | a1, a2, b2 d1, d2 |
| | | Red blood cells: production, formation of Hb & destruction. | 2 | | |
| | | Blood groups, Rh factor & cross matching. | 2 | | |
| | | Haemostasis & blood coagulation | 2 | | |
| | | Leukocytes, granulocytes, the monocyte - macrophage system (functions) | 2 | | |
| 2 | Pathology | Cellular elements of blood & bone marrow. | 2 | 1 st , 2 nd , 3 rd , 4 th | a1, a2, b1, d1, d2 |
| | | Stem Cell Disorders: <ul style="list-style-type: none"> • Classification • Aplastic anemia. • Myeloproliferative disorders. • Polycythemia. | 2 | | |

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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due | Learning Outcomes (CILOs) |
|-----|-------------------|---|---------------|--|---------------------------|
| | | Leukemias: •Acute leukemias. •Chronic leukemias. | 4 | | |
| | | Anemia: •Classification. •Nutritional anemia: Iron deficiency & megaloblastic anemia. •Hemolytic anemia: Hereditary hemoglobinopathies (sickle cell anemia) & thalassemias, hereditary spherocytosis, G6PD deficiency & immune hemolytic anemia. | 6 | | |
| | | Bleeding Disorders: •Classification. | 2 | | |
| | | •Investigations Disorders of lymphoid tissues: •Reactive conditions. •Non-Hodgkin's Lymphomas. •Hodgkin's Disease •Multiple myeloma | 4 | | |
| 3 | Microbiology | Bacterial Infections •Epidemic / endemic typhus. •Q fever | 2 | 2 nd , 3 rd , 4 th , | a2,d1, d2 |
| | | Malaria | 2 | | |
| | | Leishmania | 2 | | |
| | | Filarisis | 2 | | |
| | | Toxoplasmosis/Trypanosome | 2 | | |
| 4 | Pharmacology | Anticoagulants & fibrinolytics | 2 | 2 nd , 3 rd , | a2, d1, |

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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due | Learning Outcomes (CILOs) |
|-----|-------------------|---|---------------|--|---------------------------|
| | | Treatment of Nutritional Anemia (Iron & vitamins therapy) | 2 | 4 th , | d2 |
| | | Antimalarial agents | 2 | | |
| | | Anticancer drugs | 2 | | |
| | | Treatment of Leishmaniasis, Treatment of Filariasis | 2 | | |
| | | Treatment of Toxoplasmosis & Trypanosomiasis | 2 | | |
| 5 | Medicine | Clinical picture, diagnosis, treatment & prognosis of: Anemia & pancytopenia in adults. Idiopathic thrombocytopenic purpura | 2 | | |
| | | Neoplastic disorders: a: lymphomas b: Leukemia. c: Myeloma. | 2 | 2 nd , 3 rd , 4 th , | a1, a2,b1,b2, d1,d2 |
| | | Malaria Filariasis Leishmaniasis B.M. aspiration & biopsy (Importance in diagnosis of blood diseases) B.M transplantation Precautions & Reactions of Blood transfusion | 4 | | |

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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due | Learning Outcomes (CILOs) |
|--|-------------------------------|---|---------------|--|---------------------------|
| 6 | Pediatrics | Clinical picture, diagnosis, treatment & prognosis of: Nutritional anemia (Iron deficiency & Megaloplastic). Aplastic anemia. Hemolytic anemias. Bleeding disorders. | 4 | 2 nd , 3 rd , 4 th , | a1, a2,b1,b2, d1,d2 |
| | | Leishmaniasis. Congenital Toxoplasmosis | 2 | | |
| 7 | Final Theoretical Exam | All topics | 2 | 5 th | a1,a2, b1,b2, |
| Number of Weeks /and Units Per Semester | | | 68 | 5 | |

B. Case Studies and Practical Aspect:

| No. | Tasks/ Experiments | Week Due | Contact Hours | Learning Outcomes (CILOs) |
|-----|---|---|---------------|---------------------------|
| 1 | Physiology: Separation of blood Measurement of hemoglobin Blood groups Bleeding time , clotting time | 1 st ,2 nd , 3 rd , 4 th | 8 | b1,b2,c1,d2, |
| 2 | Pathology: Normal and abnormal red blood cells & Platelets Normal and abnormal white blood cells Blood films and bone marrow aspiration for different types of anemia Blood films and bone marrow aspiration for different | 1 st ,2 nd , 3 rd , 4 th | 14 | b2,c1,c2, d2 |

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| No. | Tasks/ Experiments | Week Due | Contact Hours | Learning Outcomes (CILOs) |
|--|---|--|---------------|---------------------------|
| | types of leukemia Blood films and bone marrow aspiration for different types of lymphoid tissues disorders | | | |
| 3 | Microbiology: Blood parasites (Malaria , Leishmania , Filaria, Trypanosoma) | 2 nd , 3 rd , 4 th | 6 | b1,b2,c1,c2 ,d2 |
| 4 | Final practical exam | 5 th | 2 | b1,b2,c1,c2,d1,d2 |
| Number of Weeks /and Units Per Semester | | 5 | 30 | |

V. Teaching Strategies of the Course:

- Interactive lectures
- Discussion
- Case studies
- Seminars
- PBL
- Office hours
- Self-learning
- Lab experiments

VI. Assessment Methods of the Course:

- Quizzes
- Final written exam
- Final clinical exam
- Final practical exam
- OSPE
- Oral discussion

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– Homework

VIII. Schedule of Assessment Tasks for Students During the Semester:

| No. | Assessment Method | Week Due | Mark | Proportion of Final Assessment | Aligned Course Learning Outcomes |
|-------|-----------------------------|-----------------|------|--------------------------------|----------------------------------|
| 1 | Quizzes | 2 nd | 5 | 5% | a1,a2, b1,b2 |
| 2 | Oral desiccation & Homework | 3 rd | 15 | 15% | a1,a2,b1,b2,d1, d2 |
| 3 | Final Practical Exam & OSPE | 5 th | 30 | 30% | b1,b2,c1,c2 |
| 4 | Final Theoretical Exam | 5 th | 50 | 50% | a1,a2, b1,b2 |
| Total | | | 100 | 100% | |

IX. Learning Resources:

1- Required Textbook(s):

- 1- S Standing, 2016, Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41st Edition, Elsevier.
- 2- K E Barrett, S M Barman, S Boitano, H L Brooks, 2015, Ganong's Review of Medical Physiology, 25th Edition, New York, McGraw-Hill Medical Education.
- 3- L Junqueira, J Carneiro, 2005, Basic Histology. Text and Atlas, 11th Edition, New York, McGraw-Hill Medical.
- 4- R Goering, H Dockrell, M Zuckerman, P Chiodini, 2019, Mims' Medical Microbiology and Immunology, 6th Edition, Edinburgh, Elsevier.
- 5- V Kumar, A Abas, J Aster, 2017, Robbins Basic Pathology, 10th Edition, Elsevier.
- 6- M A Clark, R Finkel, J A Rey, K Whalen, 2011, Lippincott's Illustrated Reviews: Pharmacology, 5th Edition, Philadelphia, Lippincott Williams & Wilkins.

2- Essential References:

- 1- R S Snell, 2000, Clinical Anatomy for Medical Students, 6th Edition, Washington, Little, Brown and Company.
- 2- J E Hall, 2013, Guyton and Hall Textbook of Medical Physiology, 13th Edition,

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Philadelphia, Saunders.

- 3- V Kumar, A Abas, J Aster, 2020, Robbins & Cotran Pathologic Basis of Disease, 9th Edition, Philadelphia, Saunders.
- 4- C Ray, K J Ryan, 2003, Sherris Medical Microbiology: An Introduction to Infectious Diseases, 4th Edition, New York, McGraw-Hill Medical Education.
- 5- B Katzung, 2017, Basic and Clinical Pharmacology, 14th Edition, New York, McGraw-Hill Medical Education.

3- Electronic Materials and Web Sites etc.:

Websites:

- 1- The Visible Body Learn Site
<https://www.visiblebody.com/learn/nervous>
- 2- Medical news today
<https://www.medicalnewstoday.com/articles/307076>

X. Course Policies: (Based on the Uniform Students' By law (2007))

| | |
|---|---|
| 1 | Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes. |
| 2 | Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class. |
| 3 | Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed. |
| 4 | Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same. |
| 5 | Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 6 | Forgery and Impersonation: |

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|---|--|
| | Forgery/Impersonation is an act of fraud that results in the cancellation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 7 | Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration. |

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Faculty of Medicine

Bachelor Program of Medicine and Surgery

Course Plan (Syllabus) of

Haemato-lymphatic System

Course Code. (A21P221)

| I. Information about Faculty Member Responsible for the Course: | | | | | | | |
|---|--------|--------------|-----|-----|-----|-----|-----|
| Name of Faculty Member: | | Office Hours | | | | | |
| Location & Telephone No.: | ---- | | | | | | |
| E-mail: | --@--. | SAT | SUN | MON | TUE | WED | THU |

2023

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II. Course Identification and General Information:

| | | | | | |
|--|---|----------------------|------------------|-------------------------|---|
| Course Title: | Haemato-lymphatic System | | | | |
| Course Code: | A21P221 | | | | |
| Credit Hours: | Credit Hours | Theory Contact Hours | | Practical Contact Hours | |
| | | Lecture | Tutorial/Seminar | Lab | |
| | 5 | 4 | -- | 2 | - |
| Level/ Semester at which this Course is offered: | 2nd Level / 2nd th Semester | | | | |
| Pre –Requisite (if any): | Physiology, Biochemistry, Anatomy Histology, Pathology and Pharmacology. | | | | |
| Co –Requisite (if any): | None | | | | |
| Program (s) in which the Course is Offered: | Bachelor of Medicine and surgery | | | | |
| Language of Teaching the Course: | English | | | | |
| Location of Teaching the Course: | Faculty of Medicine | | | | |
| Prepared by: | Dr. Ahmed Hudna | | | | |
| 11 Date and Number of Approval by Council: | 2023 | | | | |

III. Course Description:

The aim of blood course is to provide students with major basic and clinical concepts related to blood. Blood course introduces information about many topics including hematopoiesis, functions of blood components, hemostasis, causes, clinical features, diagnosis, treatment and prognosis of blood diseases. These topics will be covered by physiology, pathology, pharmacology, microbiology, medicine and pediatrics.

| | | | | | |
|-----------------|-----------------------|--------------------|--------------------------|--------------------------|--|
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IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

| | |
|---|--|
| A. Knowledge and Understanding: | |
| a1 | Explain the various constituents of blood, their function, hematopoiesis, hemostasis, blood groups and cross matching. |
| a2 | Describe infectious diseases such as bacteria, malaria, leishmania, and toxoplasmosis |
| B. Intellectual Skills: | |
| b1 | Distinguish between physiological and pathological performance of body cells. |
| b2 | Integrate the clinical features with laboratory data to recognize and classify common blood disorders. |
| C. Professional and Practical Skills: | |
| c1 | Practice medical history taking, physical/clinical examination and laboratory investigations for common blood disorders. |
| c2 | Demonstrate the normal and abnormal blood cells and blood parasites in common blood disorders |
| D. Transferable Skills: | |
| d1 | Use the information technology and internet resources efficiently for self-learning and gaining up-to-date information in the areas of interest. |
| d2 | Act independently or collaboratively as a member of teamwork and communicate effectively with others. |
| I= Introduced, P=Practiced or M/A= Mastered/Advanced | |

IV. Course Contents:

A. Theoretical Aspect:

| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due |
|-----|-------------------|----------------------------------|---------------|---|
| 1 | Physiology | Introduction & general functions | 2 | 1 st , 2 nd , 3 rd , 4 th |

| | | | | | |
|-----------------|-----------------------|--------------------|--------------------------|--------------------------|--|
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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due |
|-----|-------------------|---|---------------|---|
| | | Red blood cells: production, formation of Hb & destruction. | 2 | |
| | | Blood groups, Rh factor & cross matching. | 2 | |
| | | Haemostasis & blood coagulation | 2 | |
| | | Leukocytes, granulocytes, the monocyte - macrophage system (functions) | 2 | |
| 2 | Pathology | Cellular elements of blood & bone marrow. | 2 | 1 st , 2 nd , 3 rd , 4 th , |
| | | Stem Cell Disorders: •Classification •Aplastic anemia. •Myeloproliferative disorders. •Polycythemia. | 2 | |
| | | Leukemias: •Acute leukemias. •Chronic leukemias. | 4 | |
| | | Anemia: •Classification. •Nutritional anemia: Iron deficiency & megaloblastic anemia. •Hemolytic anemia: Hereditary hemoglobinopathies (sickle cell anemia) & thalassemias, hereditary spherocytosis, G6PD deficiency & immune hemolytic anemia. | 6 | |
| | | Bleeding Disorders: •Classification. | 2 | |

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|-----------------|-----------------------|--------------------|--------------------------|--------------------------|--|
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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due |
|-----|-------------------|--|---------------|---|
| | | <ul style="list-style-type: none"> •Investigations Disorders of lymphoid tissues: <ul style="list-style-type: none"> •Reactive conditions. •Non-Hodgkin's Lymphomas. •Hodgkin's Disease •Multiple myeloma | 4 | |
| 3 | Microbiology | Bacterial Infections | 2 | 2 nd , 3 rd , 4 th , |
| | | <ul style="list-style-type: none"> •Epidemic / endemic typhus. •Q fever | 2 | |
| | | Malaria | 2 | |
| | | Leishmania | 2 | |
| | | Filarisis | 2 | |
| 4 | Pharmacology | Anticoagulants & fibrinolytics | 2 | 2 nd , 3 rd , 4 th , |
| | | Treatment of Nutritional Anemia (Iron & vitamins therapy) | 2 | |
| | | Antimalarial agents | 2 | |
| | | Anticancer drugs | 2 | |
| | | Treatment of Leishmaniasis, Treatment of Filariasis | 2 | |
| | | Treatment of Toxoplasmosis & Trypanosomiasis | 2 | |
| 5 | Medicine | Clinical picture, diagnosis, treatment & prognosis of: Anemia & pancytopcna in adults. Idiopathic thrombocytopenic purpura | 2 | 2 nd , 3 rd , 4 th , |

| | | | | | |
|-----------------|-----------------------|--------------------|--------------------------|--------------------------|--|
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| No. | Units/Topics List | Sub Topics List | Contact Hours | Week due |
|--|------------------------|---|---------------|---|
| | | Neoplastic disorders: a: lymphomas b: Leukemia. c: Myeloma. | 2 | |
| | | Malaria Filariasis Leishmaniasis B.M. aspiration & biopsy (Importance in diagnosis of blood diseases) B.M transplantation Precautions & Reactions of Blood transfusion | 4 | |
| 6 | Pediatrics | Clinical picture, diagnosis, treatment & prognosis of: Nutritional anemia (Iron deficiency & Megaloplastic). Aplastic anemia. Hemolytic anemias. Bleeding disorders. | 4 | 2 nd , 3 rd , 4 th , |
| | | Leishmaniasis. Congenital Toxoplasmosis | 2 | |
| 7 | Final Theoretical Exam | -MCQs and essay questions | 2 | 5 th |
| Number of Weeks /and Units Per Semester | | | 66 | 5 |

B. Case Studies and Practical Aspect:

| No. | Tasks/ Experiments | Week Due | Contact Hours |
|-----|--------------------|---|---------------|
| 1 | Physiology: | 1 st , 2 nd , 3 rd , | 8 |

| | | | | | |
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| No. | Tasks/ Experiments | Week Due | Contact Hours |
|--|---|--|---------------|
| | Separation of blood Measurement of hemoglobin Blood groups Bleeding time , clotting time | 4 th | |
| 2 | Pathology: Normal and abnormal red blood cells & Platelets Normal and abnormal white blood cells Blood films and bone marrow aspiration for different types of anemia Blood films and bone marrow aspiration for different types of leukemia Blood films and bone marrow aspiration for different types of lymphoid tissues disorders | 1 st , 2 nd , 3 rd , 4 th | 14 |
| 3 | Microbiology: Blood parasites (Malaria , Leishmania , Filaria, Trypanosoma) | 2 nd , 3 rd , 4 th | 6 |
| 4 | Final practical exam | 5 th | 2 |
| Number of Weeks /and Units Per Semester | | 5 | 30 |

V. Teaching Strategies of the Course:

- Interactive lectures
- Discussion
- Case studies
- Seminars
- PBL
- Office hours
- Self-learning

| | | | | | |
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- Lab experiments
- Training

VI. Assessment Methods of the Course:

- Quizzes
- Final written exam
- Final clinical exam
- Final practical exam
- OSCE
- Oral discussion
- Homework

VIII. Schedule of Assessment Tasks for Students During the Semester:

| No. | Assessment Method | Week Due | Mark | Proportion of Final Assessment | |
|-------|-----------------------------|-----------------|------|--------------------------------|--|
| 1 | Quizzes | 2 nd | 5 | 5% | |
| 2 | Oral desiccation & Homework | 3 rd | 15 | 15% | |
| 3 | Final Practical Exam & OSPE | 5 th | 30 | 30% | |
| 4 | Final Theoretical Exam | 5 th | 50 | 50% | |
| Total | | | 100 | 100% | |

IX. Learning Resources:

- *Written in the following order: Author, Year of publication, Title, Edition, Place of publication, Publisher.*

1- Required Textbook(s) (maximum two):

- 6- S Standring, 2016, Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41st Edition, Elsevier.

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- 7- K E Barrett, S M Barman, S Boitano, H L Brooks, 2015, Ganong's Review of Medical Physiology, 25th Edition, New York, McGraw-Hill Medical Education.
- 8- L Junqueira, J Carneiro, 2005, Basic Histology. Text and Atlas, 11th Edition, New York, McGraw-Hill Medical.
- 9- R Goering, H Dockrell, M Zuckerman, P Chiodini, 2019, Mims' Medical Microbiology and Immunology, 6th Edition, Edinburgh, Elsevier.
- 10- V Kumar, A Abas, J Aster, 2017, Robbins Basic Pathology, 10th Edition, Elsevier.
- 11- M A Clark, R Finkel, J A Rey, K Whalen, 2011, Lippincott's Illustrated Reviews: Pharmacology, 5th Edition, Philadelphia, Lippincott Williams & Wilkins.

2- Essential References:

- 12- R S Snell, 2000, Clinical Anatomy for Medical Students, 6th Edition, Washington, Little, Brown and Company.
- 13- J E Hall, 2013, Guyton and Hall Textbook of Medical Physiology, 13th Edition, Philadelphia, Saunders.
- 14- V Kumar, A Abas, J Aster, 2020, Robbins & Cotran Pathologic Basis of Disease, 9th Edition, Philadelphia, Saunders.
- 15- C Ray, K J Ryan, 2003, Sherris Medical Microbiology: An Introduction to Infectious Diseases, 4th Edition, New York, McGraw-Hill Medical Education.
- 16- B Katzung, 2017, Basic and Clinical Pharmacology, 14th Edition, New York, McGraw-Hill Medical Education.

3- Electronic Materials and Web Sites etc.:

Websites:

- 3- The Visible Body Learn Site
<https://www.visiblebody.com/learn/nervous>
- 4- Medical news today
<https://www.medicalnewstoday.com/articles/307076>

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XI. Course Policies: (Based on the Uniform Students' Bylaw (2007))

Class Attendance:

1

Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.

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|---|--|
| 2 | Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class. |
| 3 | Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed. |
| 4 | Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same. |
| 5 | Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 6 | Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 7 | Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration. |

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