# Course Specification
# Student Version

| | |
|---|---|
| **Course Title:** | Hematopoietic System |
| **Course Code:** | HPS 503 |
| **Department:** | Basic Medical Sciences |
| **Program:** | Bachelor of Medicine and Surgery |
| **College:** | Vision College in Riyadh |
| **Institution:** | Vision College in Riyadh |
| **Revised:** | June 2025 |

## A. Course Identification

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| **1. Credit hours:** 5 (3+1+1) |
| **2. Level/year at which this course is offered:** Level 5/Year 3 |
| **3. Pre-requisites for this course (if any):** GAD 203, BAN 203, MBG 203, HBO 203, HBT 204, PDO204, PDT204 & BPC204 |
| **4. Co-requisites for this course (if any):** None |

## B. Teaching Methods

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|---|---|
| **1** | Lecture |
| **2** | Practical Sessions |
| **3** | Seminar |

## C. Course Description and Objectives

**1. Course Description**

The hematopoietic system course aims to provide the knowledge of human blood and its different components based on an up-to-date knowledge to the undergraduate students. Students are taught for the pathophysiological background of main blood disorders. They are also trained to recognize different types of blood cells under the microscope. In this course there is particular emphasis on disease classification, ancillary diagnostic studies, and the incorporation of laboratory testing as it pertains to patient care.

In addition to the biochemistry and molecular basis of hematopoietic system, this course will present an overview of hematologic disease, emphasizing the pathology, molecular findings, laboratory, and clinical features of the disorders. The course will begin with an overview of red blood cell disorders including the evaluation of anemia, hemoglobinopathies, thalassemia, and hemolytic processes. In addition, myeloproliferative disorders, benign and malignant lymphoid abnormalities, including Hodgkin's and non-Hodgkin's lymphomas, will be presented. The hematopoietic system course will conclude with coagulation disorders and an introduction to transfusion medicine principles.

The course offers a basic review of the biology, physiology and pathophysiology of blood and the blood forming organs, with systematic consideration of hematopoiesis, blood cells, blood coagulation, blood groups, hematological malignancies, bone marrow transplantation, immunoglobulins, and other plasma proteins. Emphasis will be given equally to the basic scientific and clinical principles. Blood and bone marrow morphology are demonstrated to the students during practical sessions.

**2. Course Main Objective**

The goal of this longitudinal course is to enable students to classify the different blood cells and to have a basic understanding of both red and white blood cell disorders and to incorporate laboratory findings into clinical problem solving.

**3. Course Objectives**

**By the end of this course, students should be able to:**

- Describe the normal structure of various parts of the body including blood and nerve supply, origin, and insertion of muscles.
- Analyze case scenarios based on knowledge of the pathogenesis of common systematic metabolic autoimmune and neoplastic diseases.
- Diagnose and solve cases of nutritional and environmental disease using knowledge of its pathogenesis.
- Apply knowledge of major drug interactions and side effects to case scenarios. .
- Select the appropriate route for drug administration for different clinical conditions.
- Perform venous and arterial blood extraction in adults on a part task trainer and on a real patient.
- Determine the process of ruling out and ruling in each of the differential diagnoses.
- Explain the principles of essential clinical investigations. Values, autonomy, and responsibility
- Collaborate with other colleagues during projects and group work showing respect for boundaries.
- Demonstrate presentation skills to an audience. Apply moral and ethical principles of medical practice in clinical decision- making". Demonstrate time management skills in submitting assignments and allotted tasks on time.

## D. Course Content

| No | List of Topics |
|---|---|
| 1 | Erythropoiesis and anemia |
| 2 | Leucopoiesis and leukemia |
| 3 | Thrombopoiesis and coagulopathy |
| 4 | Bone marrow disorders |
| 5 | Lymphomas |
| 6 | Blood grouping and transfusion |
| 7 | Erythropoiesis and anemia |

## E. Assessment Tools

| # | Assessment task | Percentage of Total Assessment Score |
|---|---|---|
| **1** | Seminar Evaluation Using Rubrics | 10% |
| **2** | Quizzes | 10% |
| **3** | Midterm Exam | 20% |
| **4** | Final Practical Exam | 20% |
| **5** | Final Written Exam | 40% |
| | **Total** | **100%** |

## F. Learning Resources

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| **Essential References** | Hoff brand's Essential Haematology A. Victor Hoffbrand and Paul A. H. Moss seventh Edition 2021 John Wiley & Sons Ltd Robbins and Cotran; Pathological Basis of Disease. Kumar, Abbas, Fausto and Aster, 8th edition, Saunders |
| **Supportive References** | http://imagebank.hematology.org/ |
| **Electronic Materials** | http://library.med.utah.edu/WebPath/HEMEHTML/HEMEIDX.html |
| **Other Learning Materials** | None |