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| <b>Subject Code: 1SC2060104</b> | <b>Subject Title: IMMUNOHEMATOLOGY</b> |
| <b>COURSE TYPE: CORE COURSE</b> | -----                                  |

**Course Objective:** The students will be able to understand immunology and hematology.

| Teaching scheme (hours) per week |           | Credit |           |       | Theory Marks    |                  | Practical Marks |                  | Total |
|----------------------------------|-----------|--------|-----------|-------|-----------------|------------------|-----------------|------------------|-------|
| Theory                           | Practical | Theory | Practical | Total | Uni. Assessment | Cont. Assessment | Uni. Assessment | Cont. Assessment |       |
| 4                                | --        | 4      | --        | 4     | 60              | 40               | --              | --               | 100   |

| Unit | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Lectures | Weightage |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|
| 1    | <b>Immunology:</b> <ul style="list-style-type: none"> <li>Introduction &amp; types of immunity, the basic mechanism of innate immunity, origin of immune cells, T cells, B cells, cytokines, function of immune system, cell mediated immunity, and antigen mediated immunity.</li> <li>Antibodies, immunoglobulin classes, MHC, organ transplantation</li> <li>Hypersensitivity</li> <li>Autoimmune diseases</li> </ul>                                | 15       | 25%       |
| 2    | <b>Hematology:</b> <ul style="list-style-type: none"> <li>Introduction, Hematopoietic system of body, Erythropoiesis, Erythrocytes, Leukopoiesis, Thrombopoiesis, Synthesis of hemoglobin, Iron metabolism.</li> </ul> <b>Routine Hematological tests:</b> <ul style="list-style-type: none"> <li>Complete blood count, methods for estimation of Hb and Blood cell counts, complete hemogram, PCV, ESR, Platelet count, reticulocyte count.</li> </ul> | 15       | 25%       |
| 3    | <b>Hematological diseases:</b> <ul style="list-style-type: none"> <li>Anemia and different types of anemia, Thalassemias, leukemias</li> </ul> <b>Special Hematological test</b> <ul style="list-style-type: none"> <li>osmotic fragility test, G6PD, Hb electrophoresis, malarial parasites, bone marrow examination, Sickling test, LE cell preparation, NESTROF test</li> </ul>                                                                      | 15       | 25%       |
| 4    | <b>Hemostasis and Coagulation</b> <ul style="list-style-type: none"> <li>Hemostasis &amp; it's mechanism,</li> <li>Blood coagulation and it's mechanism</li> <li>Determination of bleeding time and clotting time, prothrombin time, partial thromboplastin time and activated partial thromboplastin time.</li> </ul>                                                                                                                                  | 15       | 25%       |

**Learning Outcome:** The students will be able to learn about function of immune system and diagnosis of various diseases using blood.

**Reference Books:**

- Godkar P. B. Textbook of Medical Laboratory Technology. Bhalani Publishing House.
- Immunology by IM Roitt, J. Brostoff and DK Male (1993) BMP, London. 2. J Kuby (1991). Immunology freeman and company
- Basic Immunology by Jacqueline Sharon.
- Medical Laboratory Technology: procedure Manual for Routine Diagnostic tests by Mukherjee.
- Pelczar et al. Microbiology. Tata Mc Graw Hill Publishing Co.
- Anathanarayana & Panikar. A Text Book of Medical Microbiology. Universities Press.
- Willey et al. Prescott's Microbiology. Mc Graw Hill Publishing Co.
- Singh T. Text book of Haematology. Arya Publications.