**Y E A R : T H I R D**

S U B J E C T : I M M U N O L O G Yعلم المناعة

**Theoretical hours: 2**

**Practical hours: 2**

**Units: 3**

**FIRST SEMESTER**

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| **IMMUNOLOGY: THEORETICAL SUBJECTS** | **HOURS** |
| Principle of immunity and immune response (specific and non  specific) | **2** |
| Immunoglobulin: Structure, variation, Function and synthesis | **5** |
| Immunology of T and B cells | **2** |
| Complement: Nature, Function and pathways | **2** |
| Cell mediated immunity, antigen recognition by T cells | **2** |
| Immunological tolerance | **2** |
| Types of Hypersensitivity, Mechanisms | **4** |
| Auto-immunity | **3** |
| Transplantation | **2** |
| Principle of immune genetics | **2** |
| Immunoanaphylaxis reaction | **2** |
| Immunity of infection | **2** |
| **Total** | **30** |

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| **IMMUNOLOGY: PRACTICAL SUBJECTS** | **HOURS** |
| Introduction to immunology labs | **2** |
| Lab animals | **2** |
| Preservation of antigens and antibodies | **4** |
| Separation of immunoglobulin | **2** |
| Complement test | **2** |
| Precipitation test | **4** |
| Agglutination test | **2** |
| Neutralization test | **2** |
| Separation of lymphocytes from blood and lymph nodes | **4** |
| Preparation of antigens | **2** |

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| **IMMUNOLOGY: PRACTICAL SUBJECTS** | **HOURS** |
| Leukocytes | **2** |
| Phagocytosis | **2** |
| **Total** | **30** |

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| **IMMUNOLOGY: PRACTICAL SUBJECTS** | **HOURS** |
| General laboratory instructions | **3** |
| Microscopes | **3** |
| Sterilization and disinfection | **3** |
| Culture media for bacterial growth | **3** |
| Bacterial nutrition and growth | **3** |
| Colony morphology | **3** |
| Pure culture techniques | **3** |
| Bacterial motility | **3** |
| Bacterial morphology | **3** |
| Bacterial staining technique | **3** |
| Bacterial count | **3** |
| Antibiotic tests | **3** |
| Biochemical tests | **3** |
| Staphylococcus and streptococcus | **3** |
| Corynebacterium,Rhadococcus ,Listeria | **3** |
| Bacillus, clostridium and an aerobic condition | **3** |
| Mycobacterium, Pasturella | **3** |
| Pseudomonas(Burkholderia) | **3** |
| Leptospira and brucella | **3** |
| Enterobacteriacae | **3** |
| Mycology | **3** |
| Collection and preservation of viral samples | **3** |
| Isolation and propagation of viruses | **3** |
| propagation of viruses in egg embryo | **3** |
| propagation of viruses in tissue culture | **3** |

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| **IMMUNOLOGY: PRACTICAL SUBJECTS** | **HOURS** |
| Haemagglutination test | **3** |
| Haemagglutination inhibition test | **3** |
| ELISA test | **3** |
| Neutralization test | **3** |
| Precipitation and immunoflourscent test | **3** |
| **Total** | **90** |