

Semester:	08		
Course Code:	ZOOL 42902		
Course Name:	Immunology		
Credit Value:	02		
Status:	Optional		
Pre-requisites:	ZOOL 21702 and ZOOL 21711		
Co-requisite:	None		
Hourly Breakdown:	Theory	Practical	Independent Learning
	24	18	58
Intended Learning Outcomes:			
At the completion of this course unit, the student will be able to:			
<ol style="list-style-type: none"> 1. describe the development and elements of immune system with special reference to humans, 2. explain the key processes involved in generation and maintenance of immune functions, 3. discuss the immunological basis of a disease, transplantation, hypersensitivity, biological therapy and vaccine development, 4. discuss the importance of immunology in contemporary sciences and human health and, 5. conduct histological analysis of immune system structures and immunoassays. 			
Course Content:			
<p>Overview to immune system. Cell receptors and signaling: cytokines, chemokines, antibodies, T and B cell receptors. Organization and expression of lymphocytes receptor genes. Major histocompatibility complex and antigen presentation. Signal transduction and generation of memory: T and B cells development, differentiation, activation and memory. Immune cell behavior in space and time. Cell and antibody-mediated effector functions. Antibody and immune complex-mediated hypersensitivity reactions. Immunodeficiency disorders. Tolerance and autoimmunity. Immunological basis of selected infectious diseases. Transplantation and cancer immunology. Immunotherapy. Conventional and next-generation vaccines and vaccine development. Antibody generation and immunoassays. Experimental immunological models. Current topics in immunology.</p> <p>Practical sessions on histology of immune-competent organs of selected vertebrates. Selected haematological and serological assays for evaluating immune responses. Study visit at a clinical immunodiagnostic laboratory.</p>			
Teaching /Learning Methods:			
A combination of lectures, laboratory practical sessions, computer simulations and online resources.			
Assessment Strategy:			
Continuous assessment and end of semester examination. Percentage given for each sub-component indicates the percent contribution to the final marks.			
Continuous Assessment 40 %		Final Assessment 60 %	
Details:		Theory	Practical
Presentations	10 %	60 %	-
Assignments	10 %		-
Laboratory reports	10 %		
Study visit report	10 %		

Recommended Readings:

1. Owen, J., J. Punt, P. Jones & S. Stanford (2019). Kuby Immunology. 8th edition, W.H. Freeman publishers.
2. Paul, W.E. (2012). Fundamental Immunology. 7th Edition, Lippincott Williams and Wilkins.
3. Selected scholarly review and research articles on immunology.