

LS 640 CURRENT CONCEPTS IN IMMUNOLOGY

N Puri*

S.No.	Topics	Contact hours
1.	Growth of Immunology as a discipline, and newly discovered cellular and molecular components of the Immune system	2
2.	Regulation of hematopoiesis and use of hematopoietic stem cells in gene therapy	2
3.	Recent discoveries of molecular mechanisms of pathways involved in effector functions of innate immunity	2
4.	Recognition mechanisms of innate immunity: PAMPs and DAMPs	2
5.	Interface between innate and adaptive immunity	2
6.	Immunoglobulin molecule: structure-function relationship, and molecular mechanisms of generation of antibody diversity	2
7.	Monoclonal Antibodies and Antibody engineering	2
8.	Alternative pathways of antigen processing and presentation	2
9.	Transplantation	2
10.	Regulation of differentiation, selection, and activation of T lymphocytes	2
11.	Recognition mechanisms of NK cells	2
12.	Immuno pathology and mechanisms of hypersensitivity reactions	1
13.	Immune tolerance and autoimmunity	2
14.	Immune deficiency diseases	1
15.	Vaccines	2
16.	Applications of immunological principles (diagnostics etc.); tumor immunology, and immune response during bacterial, parasitic and viral infections would be discussed in context of the current knowledge of immunological mechanisms through tutorials or student presentations and discussions.	4

Suggested Reading:

1. Roitt's Essential Immunology
2. Immunobiology: The immune system in health and disease by Charles Janeway et al
3. Kuby Immunology
4. Relevant review articles/research papers/handouts will be provided in the course.