

**CURRENT CONCEPTS IN IMMUNOLOGY (LS636A)****Niti Puri\*, and Stanzin Dava****2 credits**

<b>S.No.</b>	<b>Topics</b>	<b>Teaching Faculty/Contact hours</b>
1.	Growth of Immunology as a discipline, and newly discovered cellular and molecular components of the Immune system	NP 2
2.	Regulation of hematopoiesis and use of hematopoietic stem cells in gene therapy	NP 2
3.	Recent discoveries of molecular mechanisms of pathways involved in effector functions of innate immunity	NP 2
4.	Recognition mechanisms of innate immunity: PAMPs and DAMPs	NP 2
5.	Interface between innate and adaptive immunity	NP 2
6.	Immunoglobulin molecule: structure-function relationship, and molecular mechanisms of generation of antibody diversity	NP 2
7.	Monoclonal Antibodies and Antibody engineering	NP 2
8.	Alternative pathways of antigen processing and presentation	SD 2
9.	Transplantation	SD 2
10.	Regulation of differentiation, selection, and activation of T lymphocytes	SD 2
11.	Recognition mechanisms of NK cells	SD 2
12.	Immuno-pathology and mechanisms of hypersensitivity reactions	SD 1
13.	Immune tolerance and autoimmunity	SD 2
14.	Immunodeficiency diseases	SD 1
15.	Vaccines	SD 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.	NP 2 SD 2

**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.