

7 th Semester	RBT7D001	Vaccinology	L-T-P 3-0-0	3 Credits
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Module I:**(12 hours)**

Introduction to vaccinology, Active and Passive Immunization, Designing vaccine for Active Immunization, Whole organism vaccine, Purified macromolecules as vaccines, Recombinant vaccine, DNA and RNA Vaccines, Multivalent subunit vaccines.

Module II:**(12 hours)**

Fundamental research to rational vaccine design, Fundamental of immune recognition, Implication for manipulating the T-Cell repertoire, Targeting Dendritic Cells; a rational Approach for vaccine development, Vaccination studies and recent advantages in Malaria, tuberculosis and HIV. Importance of designing new vaccines

Module III:**(12 hours)**

Role of properties of adjuvants, Plant based vaccines, Edible vaccine, Reverse Vaccinology, Cell based vaccine, Vaccine against vaccinia virus, Vaccine for cholera And Salmonella

Module IV:**(12 hours)**

Quality control and regulations in vaccine research, In vitro experiment validation for Prediction of vaccine by software, Animal testing, Rational design to clinical trials, Large scale production of vaccine in industries.

Books:

- [1] Ronald W. Ellis, New Vaccine Technology, Landes Bioscience, 2001
- [2] Cheryl Barton, Advances in Vaccine Technology and Delivery
- [3] Immunology by Thomas J. Kindt, Barbara A. Osborns, Janis Kuby