

General Virology - Web course

COURSE OUTLINE

General Concepts: Virus history, Diversity, shapes, sizes and components of genomes. Isolation and purification of viruses and components. Consequences of virus infection to animals and human. Viral infection: affect on host macromolecules. Viral infection: establishment of the antiviral state. Viruses counter attack mechanisms. Classification of viruses and nomenclatures. +strand RNA viruses- Picornaviruses. Flaviviruses- West Nile virus and Dengue virus.

Coronaviruses- SARS pathogenesis. –ve strand RNA viruses- Paramyxoviruses. Orthomyxoviruses: Influenza pathogenesis and Bird flu. Rhabdoviruses: Rabies pathogenesis. dsRNA viruses- Reoviruses. Retroviruses: structure, classification, life cycle; reverse transcription. Retroviruses: HIV, viral pathogenesis and AIDS. Small DNA viruses: parvo- and polyomaviruses. Large DNA viruses: Herpes- adeno-, and poxviruses. Miscellaneous viruses.

COURSE DETAIL

Module *	Topics and Contents	No of Lectures**
1	General Concepts: Virus history, Diversity, shapes, sizes and components of genomes. Isolation and purification of viruses and components.	6
2	Consequences of virus infection to animals and human. Viral infection: affect on host macromolecules. Viral infection: establishment of the antiviral state. Viruses counter attack mechanisms.	8



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Biotechnology

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3	Classification of viruses and nomenclatures. +strand RNA viruses- Picornaviruses. Flaviviruses- West Nile virus and Dengue virus. Coronaviruses- SARS pathogenesis.	8
4	-ve strand RNA viruses- Paramyxoviruses. Orthomyxoviruses: Influenza pathogenesis and Bird flu. Rhabdoviruses: Rabies pathogenesis.	6
5	dsRNA viruses- Reoviruses. Retroviruses: structure, classification, life cycle; reverse transcription. Retroviruses: HIV, viral pathogenesis and AIDS.	6
6	Small DNA viruses: parvo- and polyomaviruses. Large DNA viruses: Herpes-ado-, and poxviruses. Miscellaneous viruses.	6
	Total	40

*Mid course examination after module 3 and finals after the completion of module 6.

**Numbers of lectures are tentatively fixed.

References:

1. Principles of Virology 2nd edition by S.J.Flint, L.W.Enquist, R.M.Krug, V.R. Racaniello, and A.M.Skalka.
2. Fields Virology 5th Edition by Bernard Fields, David Knipe and Peter Howley.
3. Medical Virology 4th edition by David O.White and Frank J. Fenner.