

**Indian Institute of Technology Guwahati**  
**Proposal for a New Course / Revision of a Course**

Course Number & Title: BT 616 & General Virology	
L-T-P-C: 3-0-0-6	
Type of Letter Grading (Regular Letter Grades / PP or NP Letter Grades): Regular Letter Grades	
Kind of Proposal (New Course / Revision of Existing Course): Revision of Existing Course	
Offered as (Compulsory / Elective):Electives	
Offered to: B Tech/M Tech/PhD	
Offered in (Odd/ Even / Any):Any	
Offered by (Name of Department/ Center):BSBE	
Pre-Requisite: Nil.	
Preamble / Objectives (Optional): Nil	
<p>Course Content/ Syllabus</p> <p>Introduction Virus, its history, diversity, shapes and sizes. Genome Organization: Type of genome, components of genome and its use for virus and research. Isolation and purification of virus and its component. How can we isolate different types of viruses, different purification method of virus and its structural components. Consequences of virus infection to animals and human.How viruses cause disease and effect of viral infection on host macromolecules, establishment of the antiviral state and counter attack mechanisms. Classification of viruses and nomenclature.Virus nomenclature procedure and classification method. Description about general mode of replication using Baltimore classification I: dsDNA viruses, II: ssDNA viruses,III: dsRNA viruses, IV: (+)ssRNA viruses, V: (-)ssRNA viruses VI: ssRNA-RT viruses, VII: dsDNA-RT viruses, Bacteriophage and some plant viruses.Description about some plant viruses and their economic importance.Description about some dsDNA virus:Adenoviruses, herpes viruses, poxviruses, Description about some ssDNA virus:Parvoviruses, circoviruses Description about some dsRNA strand virus:Reoviruses.Description about some +ve strand RNA viruses Picornaviruses, Flaviviruses- West Nile virus and Dengue virus. Summarization of Coronaviruses- SARS pathogenesis.Description about some -ve strand RNA viruses Paramyxoviruses, Orthomyxoviruses:Influenza pathogenesis and Bird flu.Rhabdoviruses: Rabies pathogenesis. Description about some ssRNA-RT viruses:Retroviruses: structure, classification, life cycle; reverse transcription. Retroviruses:HIV, viral pathogenesis and AIDS.Description about some dsDNA-RT viruses:Hepatitis B virus. Description about some miscellaneous viruses: Emerging viruses such as Ebola, Zika, MERS etc.</p>	
Books (In case UG compulsory courses, please give it as "Text books" and "Reference books". Otherwise give it as "References".	
Text book and References: (Format: Authors, <i>Book Title in Italics font</i> , Volume/Series, Edition Number, Publisher, Year.)	
1.	Principles of Virology 2nd edition by S.J.Flint, L.W. Enquist, R.M. Krug, V.R.Racaniello, and A.M. Skalka.
2.	Fenner's Veterinary virology, 4th edition by N. James MacLachlan and Edward J. Dubovi.
3.	Medical Virology 4th edition by David O.White and Frank J. Fenner.
4.	Genomes 3 by T. A. Brown
5.	Fields Virology 5th Edition by Bernard Fields,David Knipe and Peter Howley.