BIOL 4371: General and Molecular Virology

Syllabus: BIOL 4371.001
General and Molecular Virology

Course Information

Course Prefix, Number, Section:	BIOL 4371.001
Course Title:	General and Molecular Virology
Term:	Fall 2025
Days & Times:	Monday and Wednesday; 4:00pm-5:15pm
Class Location:	JO 4.102

Professor Contact Information

Professor:	Jon Sin
Email Address:	jon.sin2@utdallas.edu
Email Policy:	Email is monitored between 8am-5pm on weekdays and responses are typically sent within 48 hours
Office Location:	RL 2.704
Office Hours:	In-person: by appointment

Course Pre-requisites
(1) BIOL 2311 and (2) BIOL 2312 or equivalent

Course Description
BIOL 4371 is a general survey course covering all aspects of virology including the structure, replication, and transmission of viruses as well as the methods used in modern virology research. The course will consist of lectures, group discussions, and other activities relating to course material

Student Learning Objectives/Outcomes
Upon completion of this course, students should be able to:

1. Be able to discuss and describe advanced areas of eukaryotic cellular biology.
2. Be able to apply this knowledge to problems likely to be encountered in a research/experimental setting.
3. Be able to read and critically understand a scientific journal article.

4. Be able to give a scientific presentation and test your comprehension of the material.

Required Textbooks and Materials

None

Suggested Course Materials

Text: Virology Principles and Applications (2nd Edition) by Carter and Saunders

Outline of Lecture Topics, Exam, and Quiz Schedule (*subject to change as needed*)

Date:	Topics Covered:	Assigned Readings:
Aug. 25th	Viral Origins, Evolution, and Lifestyle	Text: Ch. 1 & 21
Aug. 27th	Virus Structure	Text: Ch. 3
Sep. 1st	Labor Day (no class)	
Sep. 3rd	Virus Classification and Nomenclature, Viral Transmission	Text: Ch. 10 & 4
Sep. 4th	**Quiz 1** *(origins, evolution & lifestyle, virus structure, classification, and transmission)* **on eLearning**	
Sep. 8th	Methods used in Virology Research	Text: Ch. 2
Sep. 10th	Methods Used in Virology Research (cont'd) Exam 1 Review	Text: Ch. 2
Sep. 15th	**Exam 1**	
Sep. 17th	Virus Attachment and Entry	Text: Ch. 5
Sep. 22nd	Virus Transcription, Translation, and Transport	Text: Ch. 6
Sep. 24th	Genome Replication	Text: Ch. 7
Sep. 25th	**Quiz 2** *(virology methods, viral attachment, entry, transcription, translation, transport, and genome replication)* **on eLearning**	
Sep. 29th	Virus Assembly and Egress (Exit)	Text: Ch. 8
Oct. 1st	Outcomes of infection	Text: Ch. 9
Oct. 6th	Exam 2 Review	
Oct. 8th	**Exam 2**	
Oct. 13th	Herpesviruses and Other dsDNA Viruses	Text: Ch. 11

Oct. 15th	Parvoviruses and Other ssDNA Viruses	Text: Ch. 12
Oct. 16th	**Quiz 3** *(dsDNA viruses, ssDNA viruses)* **on eLearning**	
Oct. 20th	Reoviruses and Other dsRNA Viruses	Text: Ch. 13
Oct. 22nd	Picornaviruses and Other Plus-Strand RNA Viruses	Text: Ch. 14
Oct. 23rd	**Quiz 4 (***dsRNA viruses and plus-strand RNA viruses)* **on eLearning**	
Oct. 27th	Rhabdoviruses and Other Minus-Strand RNA Viruses	Text: Ch. 15
Oct. 29th	HIV and Other Retroviruses	Text: Ch. 17 & 18
Nov. 3rd	Hepadnaviruses and Other Reverse-Transcribing DNA Viruses	Text: Ch. 19
Nov. 5th	Exam 3 Review	
Nov. 10th	**Exam 3**	
Nov. 12th	Virus Vaccines and Anti-Viral Drugs	Text: Ch. 25 & 26
Nov. 13th	**Comprehensive Make-Up Exam (5-6:30pm location TBA)**	
Nov. 17th	Prions	Text: Ch. 27
Nov. 18th	**Take Home Film Review:** Vaccines – Calling the Shots (Quiz due Nov. 24th)	
Nov. 19th	Dr. Sin away at conference (no class)	
Nov. 24th	Viruses and Cancer	Text: Ch. 23
Nov. 25th	**Quiz 5** *(virus vaccines and anti-viral drugs, prions, viruses and cancer)* **on eLearning**	
Nov. 26th	**Film Review:** Video on the COVID-19 pandemic (Quiz due Dec. 4th)	
Dec. 1st	Bacterial and Plant Viruses	Text: Ch. 20
Dec. 3rd	Exam 4 Review	
TBD	**Exam 4 (Final Exam)**	

Grading Policy

There are 490 possible points in the course with the following breakdown:

400 Points	Four (4) lecture exams (100 points each)
90 Points	Six (6) quizzes (15 points each). Lowest score out of seven quizzes (5 mini exam-style quizzes and 2 take-home film review quizzes) will be dropped

Grades will be based on a percentage of total points as follows:

A+ = 98-100%	B+ = 88-89.9%	C+ = 78-79.9%	D+ = 68-69.9%	F = <60%
A = 92-97.9%	B = 82-87.9%	C = 72-77.9%	D = 62-67.9%	
A- = 90-91.9%	B- = 80-81.9%	C- = 70-71.9%	D- = 60-61.9%	

Course Policies:

Make-up Assignments	Make up assignments will only be allowed in extreme circumstances at the discretion of the instructor. Notify the professor (by email) as soon as you are aware of a problem, prior to the assignment due date.
Late Work	Late work will only be accepted in extreme circumstances at the discretion of the instructor. Notify the professor (by email) as soon as you are aware of a problem, prior to the assignment due date.
Class Materials	Lecture slides will be available to students prior to each lecture via eLearning.
Class Attendance	Attendance to all classes is expected, but attendance will not be recorded. Lack of attendance may impact overall participation evaluation which may affect final scores.
Class Participation	Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. Successful participation is defined as consistently adhering to university requirements, as presented in this syllabus. Failure to comply with these

	University requirements is a violation of the Student Code of Conduct.
Comet Creed	This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the professor.