MICR 4100 01 32273 **GENERAL VIROLOGY** **MW 3:05 PM - 4:20 PM, MUS 109**

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WM, 2:00 -3:00 PM; OR by appointment

Tentative course schedule (subject to change)

Date		Lecture	Chapter & Questions
W 1	M	Lec. 1 - Introduction; Lecture Course Syllabus	
	W	Lec. 2 - Introduction to viruses	
W 2	M	Lec. 3 - Historical background	1, 2
	W	Lec. 4 - Virus and Host Infection	1, 2 (13)
W 3	M	Lec. 5 - *cont.* Virus and Host Infection, Viral Diseases;	3, 4
	W	Lec. 6 - Patterns of Human Virus Disease	3, 4
W 4	M	Lec. 7 - Virus Structure and Classification	5
	W	Lec. 8 - Virus Replication Cycle	6
W 5	M	Lec. 9 - Host Defense Mechanisms: Vaccine	8
	W	Lec. 10 - *cont.* Host Defense: Interferon, Antiviral Drugs	8
W 6	M	Lec. 11 -Positive-sense RNA Viruses: *Picornavirus, Flavivirus*	14
	W	Lec. 12 -Positive-sense RNA Viruses: *Togavirus,*	14
W 7	M	Lec. 13 - Positive-sense RNA Viruses: *Togavirus, Coronavirus, Flavivirus*	14
	W	***First Midterm Exam***	
W 8	M	Lec. 14 - Negative-sense RNA Viruses (Monopartite): *Rhabdovirus,*	15
	W	Lec. 15 - *Paramyxovirus, Filovirus, Bornavirus,* (Multiparite): *Orthomyxovirus*	15
W 9	M	Lec. 16 - Ambi-sense RNA Viruses: *Bunyavirus, Phlebovirus, Arenavirus*	15
	W	Lec. 17 - Double-stranded RNA Viruses: *Reovirus*;	15
W 10	M	No Lecture - **Spring Break**	
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W 11	M	Lec. 18 - Subviral Pathogens: *Hepatitis Delta Virus, Viroid, Prion ; Life on the Edge*	15
	W	Lec. 20 - ***Second Midterm Exam***	
W 12	M	Lec. 19 - Medium-Sized DNA Viruses: *Adenovius*	16
	W	Lec. 20 – Single-Stranded DNA Viruses : *Parvovirus*	16
W 13	M	Lec. 21 - Small-Sized DNA Viruses: *Papovavirus*;	16
	W	Lec. 22 - Introduction to large DNA viruses, *Herpesvirus*	16
W 14	M	Lec. 23 - Cytoplasmic DNA Viruses: *Poxirus*	18
	W	Lec. 24 - Reverse Transcribing Viruses: *Retrovirus*;	19
W 15	M	Lec. 25 - Reverse Transcribing Viruses: *Hepadnavirus*;	21
	W	**Student Group Presentations (case studies)**	
W 16	M	**Student Group Presentations (case studies)**	
	W	**Student Group Presentations (case studies)**	
W 17	**M**	***Third (Final) Exam, Monday, 2:30pm -4:30pm***	

Reading Chapter & Questions in *Basic Virology, Third Edition (2008) by Edward K. Wagner, Martinez J. Hewlett, David C. Bloom, and David Camerini (Blackwell Publishing).*

Class materials available on: **canvas.calstatela.edu**

Course Prerequisite – Courses to be taken prior to this class:

MICR 3300 (Microbial Genetics) ***OR*** BIOL 3400 (Gen. Genetics) & MICR 3000A, 3000B (Gen. Micro).

The knowledge of nucleic acid and biosynthesis is necessary for an understanding of virus biology and replication. You must be familiar with the structure and synthesis of DNA, RNA and proteins. Any recent biochemistry or cell biology textbook, including Chapter 13 (Viruses Use Cellular Processes to Express their Genetic Information) in *Basic Virology*, may be used to review.

Course Objectives – To Learn, Analyze, and Understand:

1. Virus biology and replication
2. Virus disease, transmission, prevention and treatment
3. Host cell response to viral infection
4. Role of viruses in biology
5. Creative Problem Solving (Knowledge)
6. Critical thinking Skills (Truth)

This course is on the biology and replication of viruses. We will compare major groups of animal viruses and their differing strategies for replication. We will examine viral diseases and their epidemiology. The goal of education is to develop an ability to learn and think independently to arrive at truth.

Text – **REQUIRED:** *Basic Virology, Third Edition* by EK Wagner, MJ Hewlett, DC Bloom, and D Camerini (2008) will be the text for the class. It is an introductory text that covers the biology, replication strategy, and disease process of viruses. It is supported by website: www.blackwellpublishing.com/wagner.

REFERENCE: *Medical Microbiology,* by P. R. Murray et al. is for the Case Study reports.

Both books are available on 2 hour Reserve Loan in the Kennedy Memorial Library

Additional useful internet websites are listed in *Basic Virology* Appendix.

Evaluation of Student Learning

1. Written Examination – Three interval (one hour) examinations will be given. Tentative dates for the first two examinations are given in the course schedule. Exact dates will be announced in advance. The Final Examination is Friday, May 19. Each examination will be 100 points and cover lecture material, assigned text chapter reading + questions, and Case Study reports. Format of the examinations will be objective (multiple choice, true-false, identification) and short essay (similar to text chapter questions). They will challenge you to synthesize the knowledge you learned and to arrive at new concepts.

Make-Up Examination – A comprehensive make-up examination will be given to anyone missing any one of the first two examinations ***due to a serious reason***. If you are unable to take an examination, please notify the instructor in advance or as soon as possible. The instructor must be contacted within one week of the scheduled examination in order to take the make-up examination. The make-up examination will be about one week after the scheduled examination. The relevant e-mail address is on the first page to notify the instructor.

2. Case Study Group - Each student will be put into a group and given a patient medical case history along with relevant questions (taken from *Medical Microbiology*). This will enable student to learn and understand the viral diseases. The student group will give a 15 minutes Case Study presentation to the class and write a report (5-6 pages) on the accompanying questions. Evaluation will be based on the quality

of the oral presentation and of the written report (content = 30 pts., communication = 20 pts.; 50 pts. each for oral and written report = 100 pts.). More information will be given later.

Grade Assignment – A total of 400 points is possible. Grades in the course will be based on having earned the following points:

400 – 360 (100-90%)	**A**	**EXAMINATIONS**	**= 300**
359 – 320 (89-80%)	**B**		
319 – 280 (79-70%)	**C**	**CASE STUDY**	**= 100**
279 – 240 (69-60%)	**D**		**____**
below 240 (<60%)	**F**	**TOTAL**	**400**

COURSE POLICIES

Attendance: Lecture attendance is left to the prerogative of the student, with the understanding that all information presented is the student's responsibility. Failure to come to class, however, will result in fewer participation points for the in-class questions and case studies and that will have a negative impact on your grade. Please allow **48 hours** to receive responses to inquiries.

Assignments and Exams: A "0" will be assigned for any missed exams, homework assignments, etc. unless the absence is satisfactorily justified (e.g. doctor's note). There will be no make-up assignments or exams. **Assignments turned in late will not be accepted**!

Drop Policy: The Drop/Incomplete policy explained in the University General Catalogue will be strictly followed.

Academic Honesty: Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at http://www.calstatela.edu/academic/senate/handbook/ch5a.htm and www.calstatela.edu/JudicialAffairs. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation.

ADA Statement: Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation. Make sure the Office staff contact me directly at **ajazirehi@calstatela.edu**

Extra Credit: Continuous Participation in class discussion is strongly encouraged; extra credit (up to 20 points) will be given to participating students.

Students who wish to use bathroom breaks during the exams, **MUST** leave their cell phones with the instructor.

Capturing images of the exam materials by use of cellular phones, mobile devices, or other equipment with photo/video capabilities is strictly prohibited. This is an act of plagiarism and will result in receiving an "F" in the class and contact with the Dean's office. No use of ANY type of electronic devices during exams is permitted.