Welcome to Virology! Viruses are the most diverse, the most numerous, the least understood, and surely the most bizarre constituents of the entire biological world. We've known about them for more than a century, but they continue to represent one of the great frontiers of biology. Viruses cause most of the diseases you can think of, but disease represents only a one of the multiple roles that viruses play in the biosphere. This course will attempt the impossible: To cover everything about viruses (structure, diversity, infection, replication, ecology, evolution, and more) in 15 short weeks. It should be a great adventure.

Instructor:
Dr. Chuck Wimpee
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Lab: Lapham S486 (you will usually find me here)
Email: cwimpee@uwm.edu
Phone: 229-6881
Office Hours: MW 11-12

Textbook:
John B. Carter and Venetia A. Saunders
Publisher: John Wiley & Sons, Ltd.
ISBN 978-1-1199-9142-7 (paperback)
This book provides a general coverage of major viral types, mechanisms of infection, replication, reproduction, transmission, etc.

Additional reading:
What is not covered in the book will be provided in additional reading that I will post on the D2L site for the course.

Attendance:
It would be a bad idea to skip class and rely on the posted powerpoints and the reading. This is NOT an online course. Anything covered in class, whether or not it is on the powerpoints or in the reading, is fair game for exams. You need to be in class, taking notes.

Grading:
There will be four equally weighted exams. (The fourth exam is not cumulative.) Exams will be short answer/multiple choice. (The sheer number of students enrolled prevents me from having essay exams. I would never finish grading them.) Graduate students have an additional course requirement (see below).
Undergraduates: The grade will be based on the four equally weighted exams.

Graduate students: The grade will be based on four equally weighted exams plus an additional project, consisting of a term paper on a virus or viral topic chosen by the student, with my approval. The paper should be approximately 10 pages, double-spaced, with appropriate references. A requirement of the UWM Graduate School is that this additional course component comprises 30% of the final grade. It would be a good idea to start early! If you need some suggestions, I will help you with your choice of topic.

Grading scale:
A 93-100%  A- 90-92%
B+ 87-89%  B 83-86%  B- 80-82%
C+ 77-79%  C 73-76%  C- 70-72%
D+ 67-69%  D 63-66%  D- 60-62%
F 0 - 59%
This scale is flexible, but will not be made more stringent.

Schedule:
(This is my plan, but don’t be surprised if we get off schedule.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>1/22</td>
<td>What is a virus?</td>
<td>chapter 1</td>
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<td>D2L: “Virus in the Room”</td>
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<td>1/24</td>
<td>History of virology</td>
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<td>1/26</td>
<td>Landmark research using viruses</td>
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<td>1/29</td>
<td>Virus structure 1</td>
<td>chapter 3</td>
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<td>1/31</td>
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<td>Virus transmission</td>
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<tr>
<td>2/5</td>
<td>Attachment and entry</td>
<td>chapter 5</td>
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<tr>
<td>2/7</td>
<td>Viral transcription and translation 1</td>
<td>chapter 6</td>
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<tr>
<td>2/9</td>
<td>Virus genome replication</td>
<td>chapter 7</td>
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<tr>
<td>2/12</td>
<td>Review</td>
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<td>2/14</td>
<td><strong>Exam 1</strong></td>
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<td>2/16</td>
<td>Assembly and exit of viruses</td>
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<td>Outcomes of infection</td>
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<td>2/21</td>
<td>Viral classification and diversity</td>
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<td>2/23</td>
<td>Double strand DNA viruses</td>
<td>chapter 11</td>
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<tr>
<td>2/26</td>
<td>Single strand DNA viruses</td>
<td>chapter 12</td>
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<td>2/28</td>
<td>Double strand RNA viruses</td>
<td>chapter 13</td>
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<td>Plus strand RNA viruses</td>
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<td>3/5</td>
<td>Minus strand RNA viruses</td>
<td>chapter 15</td>
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<tr>
<td>3/7</td>
<td>Influenza virus</td>
<td>chapter 16</td>
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<tr>
<td>3/9</td>
<td>Review</td>
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<tr>
<td>3/12</td>
<td><strong>Exam 2</strong></td>
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<tr>
<td>3/14</td>
<td>Retroviruses</td>
<td>chapter 17</td>
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</table>
3/16 HIV

3/17-3/25 Spring Break

3/26 Reverse-Transcribing DNA viruses

3/28 Bacteriophages 1

3/30 Bacteriophages 2

4/2 Bacterial defenses

4/4 Phage and human health

4/6 Virus vaccines

4/9 Anti-viral drugs

4/11 Review

4/13 Exam 3

4/16 Giant viruses

4/18 Viral evolution 1

4/20 Viral evolution 2

4/23 Viruses as agents of evolution

4/25 Viruses in ecology 1

4/27 Viruses in ecology 2

4/30 Emerging viruses

5/2 Case studies 1

5/4 Case studies 2

5/7 Other non-cellular infective agents

5/9 Review

Tuesday, 5/15 Exam 4 10:00-12:00
University Guidelines

Official university policies may be found at the Secretary of the University website: http://www4.uwm.edu/secu/SyllabusLinks.pdf. Some policies of interest are reproduced below.

**Academic Misconduct**
The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others’ academic endeavors. A more detailed description of Student Academic Disciplinary Procedures may be found in Regents Policy Statements, UWS Chapter 14 and UWM Faculty Document #1686.

**Complaint Procedures**
Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy.

**Grade Appeal Procedures**
A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides. These procedures are available in writing from the respective department chairperson or the Academic Dean of the College/School. A more detailed description of the grade Appeal Policy may be found in UWM Selected Academic and Administrative Policies, Policy #S-28 and UWM Faculty Document #1243.

**Sexual Harassment**
Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the careers, educational experience, and well being of students, faculty, and staff. The University will not tolerate behavior between or among members of the University community which creates an unacceptable working environment.