BSc 430 – Intro. Virology
Syllabus (Fall, 2016)

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Classroom: STC 123

University Statements

Academic integrity: As members of Texas A&M University-Commerce academic community, we all are responsible to underpin the principles of academic integrity expressed by this community. We are expected to watch these principles to be kept and appreciated by others.

- The first instance of cheating will result in an automatic Zero on the exam. A second instance will result in Zero course grade (automatic F).
- Plagiarism is a serious academic criminal activity. You must cite all sources of information with properly accredited. Copying material, whether parts or whole, will result in Zero for your term paper and can incur in further University disciplinary consequences.

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Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

**Accommodations:** The American with Disability Act (ADA) is a federal anti-discrimination statue that provides comprehensive civil rights protection for persons with disabilities. Among other aspects, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have disability requiring accommodation, please contact:
- Office of Student Disability Resources or Services
- Texas A&M University-Commerce
- Gee Library, Room 132
- Tel) 903-886-5150, 903-886-5835
- Fax) 903-468-8148
- Email) StudentDisabilityService@tamu-commerce.edu

**Access to student work:** Copies or your work in this course including copies of any submitted papers and your portfolios may be kept on file storage for institutional research, assessment, and accreditation purposes. All work used for these purposes will remain anonymous.

**Course Description**
BSc 430, Intro Virology, is a course for Biological Sciences undergraduate students designed to introduce the significance of viruses to biology, the origin of life, and our current world. Viruses are the most numerous and the most ubiquitous form of life, although whether viruses are life or not is still an open debate. They are virtually everywhere and they are in tight relationship with other forms of life on earth. This course will focus on the principle nature of viral life; obligate parasite and host dependency. Topics include introduction to viruses, host specificity, viral replication cycles, virus classification & nomenclature, viral diseases, how viruses interact with host body, and host resistance to viruses.

Prerequisite:
BSc 306, Applied Microbiology or equivalents

**Class resources:**


Although above textbook will be the main source of my lecture, I often use other sources to provide in-depth information.

**Student Learning Outcomes**
Upon completion of this course, you should be able to;
Describe the structure and function of viruses
- Distinguish diverse characteristics of viruses – host range, target tissues, replication strategy, transmission, etc.
- Develop an awareness of the impact of viruses on other forms of life
- Describe the role of viruses in human diseases

Access and Navigation

**eCollege Access and Log in Information**
This course will be facilitated using eCollege, the Learning Management System used by Texas A&M University-Commerce. To get started with the course, go to: https://leo.tamu-commerce.edu/login.aspx.
You will need your CWID and password to log in to the course. If you do not know your CWID or have forgotten your password, contact Technology Services at 903.468.6000 or helpdesk@tamu-commerce.edu.

Classroom Policy
- For successful course completion, your presence and participation is essential. Your attendance grade will be determined by your presence, your participation in class discussion, and your attention to the class discussion, whether by the instructor or a fellow student.
- Students should arrive ON TIME. Late arrivals are NOT acceptable.
- Students are expected to read the assigned textbook material prior to the class.
- To create a pleasant learning environment, students MUST turn their cell phones and other potentially disruptive electronic devices. Only laptop computers are allowed to take class notes. Those laptop computers should be operated with MUTE function on (i.e. sound off). Remember, laptop is only for taking notes. You give up the privilege of using your laptop computers in class if you caught using your computer for other activities such as reading emails, chatting, watching videos, etc.

Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Presentation</td>
<td>50</td>
</tr>
<tr>
<td>2 Exams (100 pts. each)</td>
<td>200</td>
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<tr>
<td>Comprehensive Final</td>
<td>150</td>
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<tr>
<td>5 quizzes (10 pts. each)</td>
<td>50</td>
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<tr>
<td>Attendance</td>
<td>50 points</td>
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<tr>
<td>Total</td>
<td>500</td>
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Grading Scale
The final course grade will be assigned based on the following break-down;
- 90 – 100% = A
- 80 – 89% = B
- 70 – 79% = C
- 60 – 69% = D
59% and below = F

Teaching Methodology

**Web-Enhanced Course** Classroom lecture will be supplemented with lecture slides and answer keys for quizzes and exams via eCollege. Students are strongly encouraged to print lecture slides (2-4 slides per page) prior to the class and bring to the class. Periodically check course homepage as well as your email for course announcements.

**Topic Presentations** Each student will give a presentation summarizing his/her chosen topic and lead class discussion. Topic selection and white paper is due by the end of week 3. Both white paper need to be prepared in MS word (.doc or .docx) and uploaded to the corresponding “dropbox”. Misplaced assignments will not be graded. The presentations should be well-prepared, concise, and include sufficient visual aids. The presentation will be evaluated by your classmates (50%) and the instructor (50%). Below are examples of your topic. It’s okay to use any of these listed topics. However, your topic is not limited to the provided topic list. If you find an interesting topic by yourself, you can use the topic.

- Emerging viruses; Zika virus
- What are the fundamental differences between SARS and influenza pandemics?
- Is Ebola likely to become a worldwide pandemic?
- 'Smallpox has been eradicated through a worldwide vaccination program.' Comment on this statement with respect to our current knowledge and future possibilities.
- What is the best polio vaccine and what are the major barriers to the final eradication of poliovirus?
- Describe how poxviruses manipulate the mammalian host response.
- Discuss why viruses have been proposed as bioterrorism weapons?
- Discuss the emergence and control of swine flu (H1N1)
- Describe the cervical cancer vaccines currently available and discuss their effectiveness in preventing cervical cancer.
- Discuss viral inhibition of apoptosis
- Discuss the role of NEF in HIV infection
- Discuss micro-RNA and the regulation of host/virus interactions?

Your topic selection comprises 20% of your topic presentation grade (i.e. 10 pts out of 50). To earn your topic selection points, you have to submit a PDF file of your presentation source and a white paper. Your presentation source should be a scientific journal article.

**Mid-term Exams** There will be 2 mid-term exams. The exams will consist of multiple choices and short answer questions. Large portion of EXAM questions will be drawn from the same test pool as quiz pool. Thus, make sure to study materials covered by quiz-pool first. Mid-term exams will be taken in class hours.

**Comprehensive Final** The final exam will consist of multiple choices and short answer questions. The exam will cover all class materials covered through the semester with emphasis on materials not covered by mid-term exams (70% from materials covered by mid-term exams and 30% from materials NOT covered by mid-term exams). Large portion of Final Exam questions will be drawn from the same test pool as Mid-term pool.
and Quiz pool. Thus, make sure to study materials covered by those pools.

**Quizzes** There will be 5 quizzes given during the semester. Quiz schedule will be announced during class hours one week prior to the quiz. A typical quiz comprises seven 1-point questions. You will get 3 points by simply taking the quiz.

**Makeup** The student is responsible for requesting a makeup when they are unable to take the regularly scheduled exams. The request should be made within 3 days of the absence. Makeup exams will be scheduled only in the event of EXCUSED absence (as defined in the Student’s Guidebook). If the test is not made-up, the student will receive Zero for that exam. No make-ups for quizzes.

**Class Schedule**

**Week 1&2**
- Introduction and Lecture 1: Chapter 1&3 – Virus structure and infection

**Week 3**
- Lecture 2: Chapter 10 – Viral classification and evolution
- **Topic Selection & White paper due**

**Week 4**
- Lecture 3: Chapter 5-8 - Viral replication, transcription, translation, assembly, & exit/release

**Week 5**
- Lecture 4: Chapter 9 – Immune response and evasion (outcomes of viral infection)

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**Week 7**
- **Exam I (Chapter 1~4)**
  - Lecture 5: Chapter 11 – Class I: dsDNA viruses

**Week 8**
- Lecture 5: Chapter 11 – Class I: dsDNA viruses
- Lecture 6: Chapters 12 & 13 – Class II: ssDNA viruses & Class III: dsRNA viruses

**Week 9**
- Lecture 6: Chapters 12 & 13 – Class II: ssDNA viruses & Class III: dsRNA viruses
- Lecture 7: Chapter 14 – Class IV: ssRNA (+) viruses

**Week 10**
- Lecture 7: Chapter 14 – Class IV: ssRNA (+) viruses

**Week 11**
- Lecture 8: Chapter 15 – Class V: ssRNA (-) viruses

**Week 12**
- Lecture 8: Chapter 15 – Class V: ssRNA (-) viruses
- Lecture 9: Chapter 16 – Class VI: Retroviruses

**Exam II (Chapter 5~8)**

**Week 13**
- Thanksgiving break, no classes

**Week 14**
- Lecture 9: Chapter 16 – Class VI: Retroviruses

**Week 15**
- RESERVED for student presentations

**Week 16**
- **Final Exam (Comprehensive, Lecture 1 ~ 9)**
All dates and assignments are tentative and subject to change.