

Evolution of Epidemics: Biol 804
Course Syllabus – Spring 2023

Instructor: Dr. Austin Nuxoll

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Office hours: MWF 1:30 – 2:30 CST or by appointment

Course Description

Through videotaped lectures, reading and writing assignments, and online discussions, students will develop an understanding of the origin and the evolution of plagues. We will illustrate the techniques humans have to defend against epidemics and will speculate about their role in shaping humanity and our futures. Offered online, Spring of odd-numbered years.

Course Objectives: Following completion of this course, students should be able to:

1. Understand the historical background of plague-causing organisms and their effects on humans.
2. Gain knowledge of the origin and evolution of plague organisms.
3. Understand the role of humans on pathogen evolution.

Required Materials

Text: Twelve Diseases that Changed Our World

Author: Irwin W. Sherman

ASM Press, 2007

Required Materials

Computer and Software:

Access to a computer with internet access, Microsoft Word and PowerPoint. Software can be purchased through UNK bookstore at a discount. We will have video presentations that require the use of a webcam. These can be found through Walmart or Amazon starting around \$10.

Communication

The best way to reach me is through email. I will respond to email fairly quickly and if you need to talk to me please email me and we can set up a time to talk further. You should frequently check your UNK email and Canvas for course assignments or announcements. PowerPoints will be posted on Canvas but you will still be required to watch lectures as additional information provided during lectures will be pertinent.

Grading

Discussion (5pts each)	50
Quizzes (10pts each)	140
Group Project	30
Short Presentation	30
1 Exam (50pts each)	50
<u>Research Paper</u>	<u>30</u>
Total	330

Grades will be assigned using the Department of Biology standard grading scale: follows: A (93-100%), A- (90-92%), B+ (88-89%), B (83-87%), B- (80-82%), C+ (78-79%), C (73-77%), C- (70-72%), D+ (68-69%), D (63-67%), D- (60-62%), and F (below 60%).

Discussion

I will post questions on Canvas on Tuesdays and you will have until the following Monday to participate (unless directions specify differently). To receive full credit, students must have significant contributions weekly on each discussion topic. Your responses must contribute something new to the discussion and not simply restate what was mentioned in the previous response. References will be required to support your statement. Please be considerate of your classmates' responses, abusive comments or attacking other student's comments will not receive credit as comments should be constructive even if you strongly disagree with another student.

Exams/Quizzes

There will be one comprehensive exam at the end of the semester made up of short answer, multiple choice, matching, and true/false questions. There will be weekly quizzes that are due on Monday of each week. These will consist of material from lectures and assigned readings. Lockdown Browser will be used for the exams/quizzes, and they are closed note/closed book.

Group Project

Public health strategies are designed to educate members of the public; however, "othering" and stigmatization continue to occur in these campaigns. Find an example of one of these campaigns and discuss why it is problematic. As a group, create a public awareness poster that educates the public without using "othering" or stigmatizing marginalized groups. Discuss any advantages and limitations of your public awareness poster.

Research Paper

Many emerging diseases are zoonotic in nature and have the potential to cause an epidemic. Identify a wildlife/livestock disease that currently doesn't infect humans. Discuss the disease in terms of transmission, pathogenesis, severity, ease of managing the disease, and environmental factors influencing the disease, likelihood of spilling over into other species (including humans). This should be approximately 2 pages single-spaced and be sure to use a minimum of 5 peer-reviewed primary literature articles.

Short Presentations

We will have questions that require further research to answer. Answer these questions with references and create a short presentation (4-7 min). You will post your video to the discussion board by **April 28th at 11:59pm CST**. You will be responsible for viewing and commenting on three presentations by May 1st.

Late Work/Student Attendance Policy

Unless there are extenuating circumstances, for each day late, 10% of the grade will be taken off. If an assignment is over 7 days late, you will receive no credit for it. If a student is absent or anticipates an absence for either class mode, the student's primary responsibility is to directly contact the primary instructor, and the student should consult with them accordingly.

Participation in official University activities, serious health concerns, personal emergencies, and religious observances are valid reasons for absence from classes. Students are responsible for informing their instructors prior to their absence(s) from class and for completing assignments missed during their absence(s). No adverse or prejudicial effects shall result to any student with a documented, excused absence.

Academic Integrity Policy

All students at the University of Nebraska at Kearney are expected to conduct their academic affairs in an honest and responsible manner. Any student found guilty of dishonesty in academic work shall be subject to disciplinary actions. Acts of academic dishonesty include, but are not limited to:

- plagiarism, i.e., the intentional appropriation of the work, be it ideas or phrasing of words, of another without crediting the source.
- cheating, i.e., unauthorized collaboration or use of external information during examinations;
- assisting fellow students in committing an act of cheating;
- falsely obtaining, distributing, using or receiving test materials or academic research materials;
- submitting examinations, themes, reports, drawings, laboratory notes, research papers or other work as one's own when such work has been prepared by another person or copied from another person (by placing his/her own name on a paper, the student is certifying that it is his/her own work);
- improperly altering and/or inducing another to improperly alter any academic record.

Additionally, graduate students are more likely to assume roles as active scholars. With these roles come added responsibilities for academic honesty. For such individuals academic honesty requires an active pursuit of truth, not just an avoidance of falsehood. This pursuit includes but is not limited to:

- providing a full and a complete representation of any scholarly findings, be it experimental data or information retrieved from archives;
- taking care that the resources of the University (e.g., library materials, computer, or laboratory equipment) are used for their intended academic purposes and that they are used in a manner that minimizes the likelihood of damage or unnecessary wear;
- assuring that one's co-workers are given due credit for their contributions to any scholarly endeavor;
- respecting a diversity of opinion and defending one's colleagues as well as one's own academic freedom;
- respecting the rights of other students who may come under the tutelage of the graduate student and being fair and impartial in grading and other forms of evaluation; and
- seeking permission from an instructor when submitting work that has been used in other courses.

Copyright and Content Integrity

The materials on this course website are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated. The materials on this course website may be protected by copyright, and any further use of this material may be in violation of federal copyright law.

Withdraw (W) and Incomplete (I)

In unusual circumstances beyond the student's control, an incomplete (I) may be issued. The (I) is issued as a final grade with the student having 12 months to complete the necessary work. If the coursework is not completed in this time the (I) will be converted to a failing grade (F) on the student's transcript. Students may withdraw from the course before 12 weeks have been completed and a (W) will appear on the transcript. Students are responsible for filling out the necessary paperwork to complete this process. Instructors are not able to withdraw students. If the student drops the class, the (W) will not contribute to the student's overall GPA.

Student Accommodations

Students with Disabilities

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu

UNK Statement of Diversity & Inclusion:

UNK stands in solidarity and unity with our students of color, our Latinx and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>

Students Who are Pregnant

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact the Student Health office at 308.865.8218. The following links provide information for students and faculty regarding pregnancy rights. <https://thepregnantscholar.org/title-ix-basics/>

<https://nwlc.org/resource/faq-pregnant-and-parenting-college-graduate-students-rights/>

Reporting Student Sexual Harassment, Sexual Violence or Sexual Assault

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree

possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

- **Local Domestic Violence, Sexual Assault Advocacy Agency** 308-237-2599
- **Campus Police (or Security)** 308-865-8911
- **Title IX Coordinator** 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

Veterans Services

UNK works diligently to support UNK's military community by providing military and veteran students and families with resources and services to help them succeed. Veterans Services assists with the GI Bill process and acts as a liaison between the student and the Veterans Administration. If you need assistance or would like more information, please contact Lori Weed Skarka at 308-865-8520 or unkveterans@unk.edu.

Week	Schedule
Jan 23 – Jan 30	Basic Concepts in Evolution of Epidemics
Jan 31 – Feb 6	Basic Principles in Virology
Feb 7 – Feb 13	Basic Principles in Immunology
Feb 14 – Feb 20	Social Evolution of Epidemics
Feb 21 – Feb 27	Intro to Epidemiology
Feb 28 – Mar 6	One Health
Mar 7 – Mar 13	Cholera, Group Project
Mar 14 – Mar 20	Spring Break
Mar 21 – Mar 27	Smallpox, Research Paper
Mar 28 – Apr 3	Plague
Apr 4 – Apr 10	Syphilis
Apr 11 – Apr 17	Tuberculosis
Apr 18 – Apr 24	Malaria, Yellow Fever
Apr 25 – May 1	Influenza, Short Presentation
May 2 – May 8	HIV
May 9 – May 15	COVID-19, Monkeypox, and Other Emerging Infectious Diseases
Finals Week	Final Exam