

BIOL 821 Directed Readings: The Next Pandemic

Spring 2021, One Credit Class

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Course Description: Throughout history, pandemics have been the biggest killer of people from Black Death to COVID. Dr. Ali Khan, the Dean of Public Health at UNMC, has written a book about his experiences with epidemics during his career at CDC. What do these experiences teach us about pandemics and the future of humankind?

Learning Objectives

1. Students will be able to define epidemic and pandemic and give the conditions in which epidemics and pandemics arise.
2. Students will have knowledge of the diseases that have caused epidemics and pandemics and the characteristics of the infectious agent that make it successful.
3. Students will understand how CDC responds to epidemics and what steps are required to help control them.

Assignments: We will begin by reading The Next Pandemic by Ali Khan, and then we will read some scientific literature on COVID. Each week 2 students or I will lead a discussion on the readings. You will be graded based upon your weekly participation in discussion and also the leadership that you demonstrated your assigned weeks of leading discussion.

Weekly Participation in Discussion:

You will be graded based upon the following areas:

- 1) **How often you participate.** You should check the discussion board at a minimum of every three days and post comments, questions, etc. You should make a minimum of two significant contributions each week. Posts that are made late in the week and have no responses will not count toward your two comments. Our discussions will be Wednesday to Tuesday each week.
- 2) **The quality of your contribution.** This is a subjective category, but the more insightful your comments the better the quality of discussion will be. Conciseness and clarity are necessary to keep the workload for this class to a reasonable level so page long postings are discouraged. Your comments should be supported by references and should be relevant to the current topic of discussion.
- 3) **How well you interact as classmates.** Be nice. These are online discussions of scientific issues. You should read all postings, and you should respond to some of them. Your responses should demonstrate that you are aware of the discussion that has been taking place. Go beyond either “agreeing” with someone or “disagreeing” with someone and state your reasons. Be polite and constructive in your responses. This topic can be inflammatory, so we want to practice interacting in a constructive way with each other.

Leading Discussion:

Leaders will be expected to read the assigned material for that week. You will then come up with different topics or questions to discuss with your direction.

- Create questions you care about
- Focus on the main points
- Think about important conclusions you want students to reach
- Be creative.

I will be grading your leadership based upon the learning that took place that week, the quality of the questions, leadership, and the student interactions that occurred. Two students will be working together on this in case someone cannot be present each day to monitor the discussion board. Students should contact each other ahead of time to make a plan so that you create a nice, cohesive discussion plan for your week. Remember that you are leading discussion, so you do not need to respond to every comment! You just to ensure that the discussion is being monitored (please let me know if there is a problem that I need to address), and that the discussion keeps going on the right track.

Things to think about when leading discussion:

- Ask questions about the posts
- Politely point out errors of misunderstanding
- Share links and videos to expand discussion
- Respectfully disagree and share alternative viewpoints
- Use reliable support, facts, and information to support your argument or points
- Avoid dominating the discussion
- Create connections with additional information
- Stay on point

At the end of the week, the leaders will select three student comments from discussion and write a paragraph of reflection on each comment. Your comments can focus on learning that students demonstrated, what you learned during the discussion, or what may have needed more explanation. This will be due to me by Friday at 5 p.m. CST.

Designing a pandemic causing infectious organism:

The final project is to design a pandemic causing infectious organism. Grading will be done on a comparative basis. The one most likely to cause a pandemic will get all the points. The microbes that would likely cause a pandemic will get an A. Those lacking some characteristic will get but still likely to cause a pandemic will get an A-. Those missing a key characteristic will get a B+. Finally those that would not be able to cause a pandemic will get a B. Those that do not turn in the assignment will not receive any points.

You must address the following questions:

- What type of microorganism is it?
- What is the reservoir?
- How is it transmitted to a host?
- What pathogenicity does it cause and how?
- What other characteristics does it require to cause pandemic?
- Where does the outbreak need to start?

- How fast will it spread?
- Will it be lethal?
- What treatment will work against it, if any?

Grading:

One Credit

Discussion participation 10 wks (5 pts/wk)	50pts
2 weeks of leading discussion (10 pts/wk)	20 pts
2 discussion reflections (15 pts/wk)	30 pts
Pandemic causing pathogen (50 pts)	<u>50 pts</u>
Total pts=	150 pts

Grading Scale. Grades will be assigned using the standard grading scale for the Department of Biology, as 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%).

Accommodation

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 UNK Disabilities Services Coordinator, David Brandt, in the Disability Services for Students office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu

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 Cindy Ference in Student Health, 308-865-8219. The following link provides information for students and faculty regarding pregnancy rights. <http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students>

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 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.

Schedule:

Week	Chapter	Assignment	Discussion Leader
01/24-01/25	Introduction Lecture & Introduction and Preface	Watch intro lecture and review the syllabus	Julie Shaffer
01/26-02/01	Chpt 1	Discussion 1	
02/02-02/08	Chpt 2	Discussion 2	
02/09-02/15	Chpt 3	Discussion 3	
02/16-02/22	Chapt 4	Discussion 4	
02/23-03/01	Chpt 5	Discussion 5	
03/02-03/08	Historically what is the most successful pathogen? Why?	Discussion 6	Julie Shaffer
03/09-03/15	12-16 Spring Break	No Class	
03/16-03/22	Chpt 6	Discussion 7	
03/23-03/29	Chpt 7	Discussion 8	
03/30-04/05	Chpt 8	Discussion 9	
04/06-04/12	What characteristics make a pathogen successful?	Discussion 10	Julie Shaffer
04/13-04/19	Chpt 9	Discussion 11	
04/20-04/26	Chpt 10	Discussion 12	
04/27-05/03	COVID Readings	Discussion 13	Julie Shaffer
05/04-05/11	Final	Create your own pathogen	Due the 11 th at 11:59 p.m.

Notes about the Schedule:

If you cannot lead the discussion for the week listed, it is up to you to find someone to trade with you. We will begin the discussion Week 2 on Wednesday. Please let me know if you have any questions or concerns.