

Infectious Diseases: Biol. 840
Course Syllabus – Fall 2021

Instructor: Dr. Austin Nuxoll

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

Course Description

This course is an introduction to human host pathogen interactions and microbial pathogenesis. Topics will focus on mechanisms of infectious disease transmission, the immune response to these infections, conventional and alternative antimicrobial treatment, and hot topics in current scientific literature.

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

1. Understand the complexity and diversity of microbial virulence, specifically understanding different strategies pathogens employ for host manifestation of disease
2. Have a general understanding of the host response to pathogens and different ways pathogens evade the immune response
3. Identify methods of treatment and prevention of infection

Recommended Materials

Text:

Sherris Medical Microbiology

Kenneth J. Ryan and C. George Ray

Seventh edition

McGraw-Hill, New York, NY

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)	65
3 Exams (30pts each)	90
Quizzes (10pts each)	30
Case Studies (10pts/wk)	60

Presentations (10pts each)	60
Final Paper	30
Total	335

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. To receive full credit, students must have significant contributions weekly on each discussion topic. Once we begin the student presentations (Week 5) you must have 5 meaningful comments on the presentations as well as one comment on each of the other topics posted. 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. Discussions will be posted and due as follows:

- Discussion 1: posted Tuesday, August 24; closes Monday, August 30**
- Discussion 2: posted Tuesday, August 30; closes Monday, September 6**
- Discussion 3: posted Tuesday, September 7; closes Monday, September 13**
- Discussion 4: posted Tuesday, September 21; closes Monday, September 27**
- Discussion 5: posted Tuesday, September 28; closes Monday, October 4**
- Discussion 6: posted Tuesday, October 5; closes Monday, October 11**
- Discussion 7: posted Tuesday, October 19; closes Monday, October 25**
- Discussion 8: posted Tuesday, October 26; closes Monday, November 1**
- Discussion 9: posted Tuesday, November 2; closes Monday, November 8**
- Discussion 10: posted Tuesday, November 9; closes Monday, November 15**
- Discussion 11: posted Tuesday, November 16; closes Monday, November 22**
- Discussion 12: posted Tuesday, November 30; closes Monday, December 6**
- Discussion 13: posted Tuesday, December 7; closes Monday, December 13**

Exams

Exams will consist of short answer questions in a take home format. Students will be given one week to complete the exam. These can be time-consuming depending on your expertise on the topic so please do not procrastinate. Exam dates are as follows:

- Exam 1: available Tuesday, Sept 14; due Monday, Sept 20 at 11:59 p.m. CST.**
- Exam 2: available Tuesday, Oct 12; due Monday, Oct 18 at 11:59 p.m. CST.**
- Exam 3: available Tuesday November 9; due Monday, November 15 at 11:59 p.m. CST.**

Quizzes

Each quiz will consist of short answer, multiple choice, and true/false questions. You will be presented one question at a time and once answered you will not be able to return to previous questions. Quizzes will be administered through canvas in an online timed format. Material for

the quizzes will directly come from the lectures and will cover two weeks of material. Quiz dates are as follows:

Quiz 1: available Tuesday, Aug 31; due Monday, Sept 6 at 11:59 p.m. CST.

Quiz 2: available Tuesday, Sept 7; due Monday, Sept 13 at 11:59 p.m. CST.

Quiz 3: available Tuesday, Sept 14; due Monday, Sept 20 at 11:59 p.m. CST.

Case Studies

For the case study assignments, students will work in groups, and each group is assigned the same case study. Everyone in the group needs to participate and students that do not contribute to their group will not receive credit for that assignment. The same guidelines for discussion also apply to participation with the case studies.

Case Study 1: posted September 20; closed September 27

Case Study 2: posted September 27; closed October 4

Case Study 3: posted October 4; closed October 11

Case Study 4: posted October 18; closed October 25

Case Study 5: posted October 25; closed November 1

Case Study 6: posted November 1; closed November 8

Disease Presentation

Students will be responsible for a combination of 2 bacterium, virus, and parasite/fungi. Pathogens will be assigned the week of August 30th. Students will create a PowerPoint presentation each week (approximately 5 minutes in length) and write a case study paper on one of their pathogens. Students will be responsible for reviewing **five** student presentations during each week. Final case study papers will be due **December 13th by 11:59 pm CST.**

Academic Dishonesty

Plagiarism will not be tolerated, please refer to the student handbook or ask me for more clarification on the subject if unsure what constitutes plagiarism. It is expected students work independently on assignments unless otherwise stated by the instructor. Group work where not specified will be considered cheating and students will receive a zero for that assignment. Multiple offenses will result in the student(s) receiving a failing grade for the course and possible removal from the program.

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 9 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 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.

Preparation for class	Dates	Schedule
Chapter 1 Chapter 5	August 23 August 25 August 27	Lecture 0: Syllabus Lecture 1: Introduction to ID Lecture 2: Host-Parasite Interaction
Chapter 2	August 30 September 1 September 3	Lecture 3: Innate Immunity Lecture 4: Adaptive Immunity Lecture 5: Vaccination
	September 6 September 8 September 10	Labor Day Break Lecture 6: Antibiotics Lecture 7: Antibiotic Resistance

	September 13	Exam 1
	Week 5	Bacteria: Background/Epidemiology/ Transmission/Reservoirs
	Week 6	Bacteria: Pathogenesis/Immune Evasion
	Week 7	Bacteria: Symptoms/Diagnosis/Treatment/Prevention
	Week 8	Exam 2
	Week 9	Viruses: Background/Epidemiology/ Transmission/Reservoirs
	Week 10	Viruses: Pathogenesis/Invasion and Replication/Immune Evasion
	Week 11	Viruses: Symptoms/Diagnosis/Treatment/Prevention
	Week 12	Exam 3
	Week 13	Fungi/Parasites: Background/Epidemiology/ Transmission/Reservoirs
	Week 14	Thanksgiving Break
	Week 15	Fungi/Parasites: Pathogenesis/Immune Evasion
	Week 16	Fungi/Parasites: Symptoms/Diagnosis/Treatment/Prevention
	Finals Week	Final Case Study Paper Due