

DYNAMICS OF INFECTIOUS DISEASES – BIOL 5307
FALL 2020

Instructor: Dr Crystal Kelehear Graham, Assistant Professor
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Office Hours: *Tuesday:* 12:30-14:00 | *Wednesday:* 10:30-12:30 | *Thursday:* 12:30-14:00
|& by appointment

Lecture: Tu/Th 11:00-12:15 | WSB 107

Course description:

This course will focus on infectious diseases and the factors that influence their emergence, spread, and persistence. Central topics covered by this course include basic epidemiology, disease agents, disease transmission, host immunity, vaccination programs, disease treatment, antibiotic resistance, and disease outbreaks.

Class content will include lectures and scientific paper discussions and presentations.

Suggested Light Reading:

- Preston, 1995. The Hot Zone: The terrifying true story of the origins of the Ebola virus.
- Barry, 2005. The Great Influenza: The story of the deadliest pandemic in history.
- Quammen, 2013. Spillover: Animal infections and the next human pandemic.

Program Learning Outcomes:

The biology student graduating with a MS in Biology should be able to:

- 1) Understand and implement scientific methodology.
- 2) Utilize field techniques for addressing scientific questions.
- 3) Utilize statistics for the analysis of data within the discipline.
- 4) Effectively disseminate scientific findings using both written and oral communication.

Student Learning Objectives for this Course:

- 1) Students will be able to apply terminology relevant to infectious disease.
- 2) Students will demonstrate an understanding of the factors that drive the incidence, severity, and distribution of infectious diseases.
- 3) Students will be familiar with significant historical disease outbreaks and the factors that caused them.
- 4) Students will develop their critical thinking and scientific writing skills.

Lecture attendance:

Class attendance and active participation in discussion is required for this course.

Lectures will not be posted on Blackboard so students must attend lectures to receive the material. In addition, the class will be heavily discussion based so attendance is required for this to work. This being said, due to COVID19, **anyone feeling ill should not come to class**. In the event that students miss class due to illness or other university-approved absences (SRSU athletic events, death in the family, illness, etc; see <https://www.sulross.edu/sites/default/files//sites/default/files/users/docs/stulife/academic.pdf> for further details) they must contact the instructor via email to request missed material.

Lecture behavior:

Please:

- * *do* wear a mask in class
- * *do* keep 6ft of distance between you and your classmates and instructor
- * *do* be on time to class
- * *do* turn off your phone and put it away; phone use is distracting to your peers and the instructor
- * *do* feel free to take notes on a laptop but don't use your laptop for anything else while in class, it's distracting to others

Academic dishonesty and late or missed work:

All assessments should be your own work, unless it is a pair/group assignment. Any evidence that the work is copied from a peer or the internet or any other source will result in a zero for the assessment and you will be reported to the university for Academic Dishonesty. I do not accept late work. **Students cannot miss exams** unless they have a documented, university-approved excuse; in these cases, the instructor needs to be informed in writing **>24 hours in advance** of the exam to allow time for the instructor to prepare a make-up exam. The make-up exam must be taken within 6 days of the original exam.

Assessments:

Paper Summaries and Discussions and Class Exercises: 20%

Written Report: 15%

Other Assignments: 5%

Exam I: 20%

Exam II: 20%

Exam III: 20%

Grading: **A** 90 – 100% **B** 80 – 89% **C** 70 – 79% **D** 60 – 69% **F** 0 – 59%

Class schedule (subject to change):

	Date	Topic
<i>Week 1</i>		
Lecture 1	Tuesday, August 25	Course Introduction & Parasites/Pathogens
Lecture 2	Thursday, August 27	Transmission
<i>Week 2</i>		
Lecture 3	Tuesday, September 1	Transmission
Lecture 4	Thursday, September 3	Transmission
<i>Week 3</i>		
Lecture 5	Tuesday, September 8	Disease
Lecture 6	Thursday, September 10	Immunity
<i>Week 4</i>		
Lecture 7	Tuesday, September 15	Immunity
Lecture 8	Thursday, September 17	Treatment
<i>Week 5</i>		
Lecture 9	Tuesday, September 22	Antibiotic Resistance
EXAM	Thursday, September 24	Exam I
<i>Week 6</i>		
Lecture 10	Tuesday, September 29	Ecology of Disease
Lecture 11	Thursday, October 1	Ecology of Disease
<i>Week 7</i>		
Lecture 12	Tuesday, October 6	Epidemiology
Lecture 13	Thursday, October 8	Epidemiology
<i>Week 8</i>		
Lecture 14	Tuesday, October 13	Vaccination
Lecture 15	Thursday, October 15	Graduate Report Due Control
<i>Week 9</i>		
Lecture 16	Tuesday, October 20	Disease Emergence
Lecture 17	Thursday, October 22	Disease Emergence
<i>Week 10</i>		
EXAM	Tuesday, October 27	Exam II
Lecture 18	Thursday, October 29	Epidemics & Pandemics
<i>Week 11</i>		
Lecture 19	Tuesday, November 3	Outbreak Case Studies
Lecture 20	Thursday, November 5	Outbreak Case Studies
<i>Week 12</i>		
Lecture 21	Tuesday, November 10	Outbreak Case Studies
Lecture 22	Thursday, November 12	Outbreak Case Studies
<i>Week 13</i>		
Lecture 23	Tuesday, November 17	Outbreak Case Studies
Lecture 24	Thursday, November 19	Outbreak Case Studies
<i>Week 14</i>		
Lecture 25	Tuesday, November 24	Outbreak Case Studies – Online
NO CLASS	Thursday, November 26	Thanksgiving Break
<i>Week 15</i>		
Lecture 26	Tuesday, December 1	Outbreak Case Studies – Online
NO CLASS	Thursday, December 3	No classes – Dead Day
<i>Week 16</i>		

EXAM	Monday, December 7	(10:15am-12:15am) Exam III (online)
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Note – Lecture topics are subject to change according to course interest, organization, and timing constraints.

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. Students seeking accessibility/accommodations services must contact Rebecca Greathouse Wren, Suite 112, Ferguson Hall, Ph: 432-837-8203, email rebecca.wren@sulross.edu