

**BIMS 110 One Health in Action
Course Syllabus
Fall Semester – 2017**

COURSE COORDINATOR AND INSTRUCTOR:

Section 501-502

Dr. Colin Young, Course Coordinator, section 501.

Department of Veterinary Integrative Biosciences

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Office Hours by Appointment

Office Location: Vet. Med. Research Bldg. Rm 310 (VMR)

MEETING TIMES:

Section 501: Fridays @ 1:30 – 2:20pm

Section 502: Fridays @ 3:05 – 3:55pm

CLASS/LAB LOCATION: National Center for Therapeutic Manufacturing, Room 122

CREDIT HOURS: 1 Hour

COURSE DESCRIPTION: to explore the concept of One Health; the health of humans, animals, and ecosystems are interconnected and interdependent; the conceptual framework that encompasses human and veterinary medical sciences, agricultural sciences, food safety, public health and epidemiology, environmental health and toxicology, wildlife ecology and conservation, and many related fields of study or research.

PREREQUISITES:

Freshman or sophomore classification, or approval of instructor.

RECOMMENDED TEXTS AND MATERIALS:

All recommended texts and readings will be made available through eCampus.

COURSE GOALS:

1. To provide intellectual and social transition into Texas A&M University for students having a common interest in any aspect of One Health: animal health, human health, environmental health, and the linkages of the three.
2. To foster first year students' abilities to integrate learning across disciplines and gain an understanding of the value of a One Health framework for improving global health.
3. To provide students with contacts with faculty members as a resource for information on topics on One Health.

LEARNING OUTCOMES:

At the conclusion of the semester, students will:

1. diagram the conceptual framework of One Health and describe its significance towards the quality of their lives
2. explain the concepts of One Health to a lay audience

- illustrate how scientists, health care providers, and government regulatory agencies from different disciplines interact to produce science-driven positive changes in the health of both animals, humans, and the environment

COURSE POLICIES & INSTRUCTOR EXPECTATIONS:

- Students will be expected to attend all 14-class sessions.
- Multiple guests will be in attendance at sessions throughout the semester; students are expected to be on time! This is a courtesy to the speaker and a sign of professionalism on the part of students.
- Students are expected to avail themselves of the information and opportunities presented throughout the semester. This means ask questions if you don't understand, read or view assignments before class, and visit with the faculty if you would like further information on a topic.
- Students will be courteous and respectful of one another and our presenters. This means cell phones and mobile devices will not be used during class except as directed by the instructor or guest lecturer.
- Failure to attend a class without a university-approved excuse will result in a 5-point loss per absence.

EVALUATION/GRADING OF THE COURSE:

Grading will be based on the best scores on 10 out of 14 quizzes taken online through e-Campus and on class attendance according to a 500-point scale:

50 points per quiz – best of 10 = 500 points possible

450 - 500 points	= A
400 – 449.9 points	= B
350 – 399.9 points	= C
300 – 349.9	= D
< 300 points	= F

Quizzes will be taken online and will cover the material from the most recent class period. Students are expected to read their lecture notes as well as the provided online materials, and then take the posted quiz on eCampus. **The quiz must be completed by 12:00 noon of the following Wednesday.** Only the first attempt of the quiz will be graded. Students with a University-approved excuse will be allowed to make-up the quizzes.

ATTENDANCE & LATE WORK POLICY:

Late work (quizzes) is only accepted in the case of a University-approved excuse. See Student Rule 7 for a complete definition (<http://student-rules.tamu.edu/rule07>).

Attendance will be taken weekly. An unexcused absence in the course will reduce your grade by 5 points (out of a possible 500). In the case of a University-approved absence, please notify the instructor within 48 hours of the absence.

AMERICANS WITH DISABILITIES ACT (ADA) POLICY STATEMENT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with

disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe, you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit <http://disability.tamu.edu>.

ACADEMIC INTEGRITY STATEMENT AND POLICY

“An Aggie does not lie, cheat or steal, or tolerate those who do.” For additional information, please visit: <http://aggiehonor.tamu.edu>.

COURSE TOPICS, INSTRUCTORS, CALENDAR OF ACTIVITIES, AND LEARNING OBJECTIVES:

Class Date	Topic	Presenter	Quiz Due Date
Introduction and Historical Perspectives			
Sept. 1 st	One Health in Action: A Planet in Reaction	Dr. Krecek	Sept. 6 th noon
Learning Objectives			
<ul style="list-style-type: none"> • Define the term One Health and explain the relevance to Biomedical Science. • Discuss a case report and identify the aspects relevant to One Health. • Identify two potential opportunities and two potential challenges to One Health today. 			
Sept. 8 th	Ancient Infectious Diseases; where did they come from and when will they return?	Dr. Tizard	Sept. 13 th - noon
Learning Objectives			
<ul style="list-style-type: none"> • Discuss the major historical pandemics including the plague, smallpox, tuberculosis, yellow fever, influenza and HIV/AIDS. • Describe the role of rodents in the Black Death, of cattle in tuberculosis, and of birds and swine in influenza. • Describe how HIV/AIDS spread from certain chimpanzee populations to cause a global pandemic as a result of a series of human errors and omissions. • Discuss the future potential of major disease outbreaks as humans interact even more closely with wild and domestic animals. 			
Sept. 15 th	Comparative Medicine – The origins of One Health	Dr. Kier	Sept. 20 th – noon
Learning Objectives			
<ul style="list-style-type: none"> • Discuss the role of comparative medicine in the context of One Health. • Describe the role animal models have played in our understanding of disease. 			
Environment, Health and Global Security			
Sept. 22 st	Teratogens and Birth Defects	Dr. Golding	Sept. 27 th – noon
Learning Objectives			
<ul style="list-style-type: none"> • Define the term “birth defect” and briefly describe the developmental origins of congenital malformations & childhood disorders. • Define the term “teratogen” and list common types of agents that can cause birth defects. • Discuss the concept of a “Developmental Window” and state the relevance to birth defects. • Examine clinical cases and identify aspects of reproductive biology pertinent to the One Health concept. 			
Sept. 29 th	Antibiotic Resistance in Animals and Man	Dr. Scott	Oct. 4 th – noon

Learning Objectives

- Discuss antibiotic resistance mechanisms among food-borne pathogens and their relation with the use of antibiotics in food animals.
- Discuss the relevance to public health, animal well-being, and to healthy ecosystems.

Oct. 6th

Gene Therapy and Genetic Engineering

Dr. Long

Oct. 11th – noon**Learning Objectives**

- Define the term “transgene” and briefly describe the history of transgenic plants and animals.
- Define the term “Genetically Modified Organism” and explain the relevance to agriculture.
- Define the term Gene Therapy and explain the relevance to biomedical practice

Oct. 13th

Cancer in Animals and Humans

Dr. Porter

Oct. 18th - noon**Learning Objectives**

- Discuss the role of Environment in Cancer
- Compare Animal and Human Models of Cancer Progression
- Discuss the Utilization of Animal Models of Cancer Treatment

Oct 20th

Bioterrorism & One Health

Dr. Adams

Oct. 25th – noon**Learning Objectives**

- Discuss what constitutes biological & legal bioterrorism in the context of One Health.
- Describe the technical components of implementing & delivering bioterrorism in the context of One Health.
- List the individual, local, state, national & international consequences of bioterrorism in the context of One Health.

Oct. 27th

Climate change & One Health

Dr. N. Johnson

Nov. 1st – noon**Learning Objectives**

- Define the term Climate Change and describe the relevance to the concept of One Health
- List examples of climate change having impacted animal and human health.
- Describe the basis of climate change and discuss confounding and contributing factors.

Infectious Disease and VaccinesNov. 3rd

Zika Virus Epidemic and One Health

Dr. A. McGregor

Nov. 8th – noon**Learning Objectives**

- Describe the epidemiologic features of major foodborne pathogens, including geographic distribution, reservoirs, prevalence, modes of transmission, and risk factors.
- Characterize the burden of foodborne disease on public health
- Identify the integral roles played by various collaborative disciplines in striving to improve food safety

Nov. 10th

Zoonotic Diseases: A Shared Threat

Dr. Budke

Nov. 15th - noon**Learning Objectives**

- Define the term “zoonotic” and describe the common means of zoonotic disease transmission.

- List and briefly discuss several zoonotic diseases of local importance.
- Illustrate how zoonotic diseases relate to the concept of One Health.
- Apply concepts discussed in class to specific issues and case studies.

Nov. 17th

Epidemiology, Public Health Impact of Foodborne Pathogens

Dr. Lawhon

Nov. 22nd – noon

Learning Objectives

- Describe the Epidemiologic features of major foodborne pathogens, including geographic distribution, reservoirs, prevalence, modes of transmission, and risk factors.
- Characterize the burden of foodborne diseases in public health.
- Identify the integral roles played by various collaborative disciplines in striving to improve food safety.

Dec. 1st

Avian Influenza

Dr. Reddy

Dec. 6th – noon

Learning Objectives

- Discuss the Evolution and Ecology of Avian Influenza.
- Discuss the Zoonotic Potential of Avian Influenza.
- List and Describe Pandemics of Avian Influenza.

Final Exam week