**Course Objectives**

This course takes a multidisciplinary approach to examining the impact of infectious diseases on our world. Epidemic (both past and present), emerging and zoonotic diseases, and how they are identified, studied and combated, are discussed. Topics also include the sociological, psychological, historical, ecological and economic implications of infectious diseases. The course is equally suitable for science and non-science majors. Students are expected to master the concepts of disease, how scientific investigation is done, and the various mechanisms by which infectious diseases impact individuals and the societies in which they live.

The course is designed to be challenging and stimulating for all students regardless of academic background or career goals. Non-science majors find themselves challenged to see the world of parasites (a term used loosely in this course in reference to any organism that takes damaging advantage of another) through the eyes of a scientist. Science majors are compelled to appreciate the implications of parasitism beyond the biology of parasitizing organisms and host/parasite interactions. By the end of the course, students can expect to have a good grasp of the global implications (literally and figuratively) of parasitic diseases and be capable of sharing this fascinating and often scary world with others both within and outside the academic community.

The course is largely organized in a topical fashion, generally with single lectures covering one disease or organism or health/science issue. The lectures are divided into four major sections that move forward in time. Because some infections have been around for a long, long time, some of those discussed early on might not be very familiar to you. Experts are brought in to cover several of these topics, so students benefit from the expertise and excitement that these individuals have for their respective fields of work and study.

**Topical Outline**

1 Introduction: Why are we here? ; Overview of Infectious Pathogens

2 Immunology: the basics

3 Microbiology and molecular biology: the basics

4 Smallpox- to be or not to be

5 Plague- the Black Death and Iatrogenic Infection

6 Malaria

7 Influenza- pandemic of 1918 and future threats

8 Pathogen and Infectious Diseases: travel through time

9 History and evolution of medicine

10 Scientific research and ethics- from Hitler to Tuskegee

11 Outbreak investigation

12 Cholera and the birth of epidemiology

13 Polio- the stealthy killer

14 Vaccines- history, challenges and misconceptions

15 Zoonotic viruses in bats

16 Worm woes- living in this wormy world

17 Exotic viral infections

18 Mosquito-borne viruses in the US

19 Tuberculosis

20 HIV- history, biology, immunology and opportunistic infections

21 Prions, Creutzfeldt-Jakob disease, kuru and mad cow disease

22 Current approaches to handling people, parasites and plagues

23 Current approaches to handling PPP

24 Community transmission of Infection

25 Bioterrorism

26 Drugs, drug development and resistance- those with no voice are not heard

27 The human microbiome: what's in your gut?

**Honor Code Reference**

The University Honor Code and Academic Honesty Policy will be strictly adhered to and students will be made aware of this policy. The sole out-of-class assignment will be to write a short article; students will be free to discuss this assignment amongst themselves (i.e., authorized assistance). Otherwise, students will be evaluated by in-class examinations that will be carefully monitored by the faculty. Any academically dishonest act by a student that is discovered by or brought to the attention of the faculty will be dealt with in a manner consistent with the University policy.