HNRS 1520: Perspectives In Social Science
MICROBES RULE: IMPACT OF DISEASE ON HISTORY
Gene Sessions and Craig Oberg

Course Learning Objectives
Describe how individuals and groups influenced and were influenced by the course of disease.*
Identify the power of disease to shape social phenomena and understand alternative explanations.*
List specific examples of the power of disease to influence historical events.
Apply basic historical concepts and methods to identifying the effects of disease in history.*
Evaluate the general lack of coverage of the effects of disease in works of history.
Explain scientific reasons for the startling influence of microbes in human history.
Describe the nature of several influential diseases.
Review scientific principles that relate to the effects of disease in history.
*Social Science General Education Outcomes

Each Online Unit is comprised of the following:
1. Introductory video
2. Learning objectives specific to that unit
3. Four to five videos on the impact disease had on specific historical events
4. Accompanying essays (linked to additional information) for each video
5. Science Focus Essay and Video
6. Video and essay on a featured disease found in one of the historical essays/videos
7. History mystery (with a short video explaining the mystery)
8. Reading Assignments (plus supplemental readings)
9. Vocabulary terms relevant to science focus and historical essays
10. Unit Quiz

Assessments for Each Unit (Honors Course)
1. Unit Quiz – questions on material from historical materials, science focus, reading assignments, and featured disease.
2. Reading Assignments will be given from 3 books and germane articles to supplement both historical and science videos/essays.
3. One to two page paper discussing the History Mystery for each unit, three sources or citations required (6 total discussion papers).
4. Capstone-writing project: Select a disease and become an expert on the disease and its social impacts along with any possible implications on future events. An encyclopedia style article with five references and a 1,500 word limit.

Texts
Unit 1. Effect of Disease on Religion

Learning Objectives
1. Explain the ways disease may influence the success and failure of religions.
2. Distinguish between the way Greco-Roman polytheism and Christianity dealt with plague in ancient Rome.
3. Identify reasons for the success of early Christians in confronting ancient Roman plagues.
4. Outline the story of the defense of Mecca in 570 AD.
5. Formulate a scientific explanation for the defeat of the Axumite army before Mecca in 570 AD.
6. Describe ways the Black Death undermined the authority of Catholic Church.
7. Associate the Black Death with dramatic changes in European culture that took place in its wake.
8. Sketch the possible role of disease in the Salem Witch incident.
9. Compose an argument for a microorganism as a cause for the hallucinations Salem witches experienced.
10. Explain the major theories that have been held concerning the cause of disease from the earliest times to the present.
11. Summarize the scientific discoveries led to the development of germ theory and review the contributions made by van Leeuwenhoek, Pasteur, and Koch?
12. Compare the theories of spontaneous generation and biogenesis.
13. Identify the causative agent, method of transmission, clinical symptoms, treatments and methods of prevention for Bubonic Plague.
14. Define the terms in this unit including: pathogen, etiology, infection, and virulence.

Historical Videos/Essays
Birth of Islam: War of the Elephants (smallpox)
Rise of Christianity: Roman Plagues
Advent of Protestantism: The Black Death (bubonic plague)
Salem Witch Trials (ergot poisoning)

Science Videos/Essays
Science Focus: Origins of Disease (Magic vs. Germ Theory)
Featured Disease: Bubonic plague

History Mystery: What factors caused Native Americans to convert so rapidly and so extensively to Christianity in the aftermath of their contact with Europeans in the sixteenth century?

Religion: Readings and Resources
Texts:

For Further Study:
Unit 2. Effect of Disease on Conquest and Exploration

Learning Objectives
1. List the ways disease has influenced conquest and exploration.
2. Explain the absence of disease in the Vikings who invaded America.
3. Analyze the failure of the Vikings to get credit for the “discovery” of America.
4. Differentiate between the roles smallpox played in the conquests of Mexico and Peru.
5. Review the effect of disease on the rapid depopulation of the Americas after 1492.
6. Outline factors involved in the Louisiana Purchase in 1803.
7. Relate the likely role of yellow fever in Napoleon’s decision to sell Louisiana to the U.S.
8. Discuss problems Lewis and Clark had with syphilis.
9. Recite the dangers the Lewis and Clark Expedition experienced with poisoned food.
10. Explain the origin of human diseases.
11. Identify the ways agricultural development and livestock domestication allowed animal diseases to impact humans.
12. Explain where emerging diseases come from today.
13. Define the terms in this unit including: zoonose, vector, virus, parasite, etc.

Historical Videos/Essays
Vikings, Greenland and North America (bubonic plague)
Conquest of Mexico and Peru (smallpox and measles)
The Louisiana Purchase (yellow fever)
The Lewis and Clark Expedition (syphilis and food poisoning)

Science Videos/Essays
Science Focus: Where do human diseases come from? (Origins of Human Disease)
Featured Disease: Yellow fever

History Mystery: Why do historians tend to neglect the effects of disease on history?

Reading Assignments:
Texts:

For Further Study:
Unit 3. Effect on Migration and Movement of Populations (Geography)

Learning Objectives
1. Outline the role of Old World diseases in the depopulation of the Americas and Oceania.
2. Locate the regions of the world most affected by the spread of Old World diseases.
3. Identify and describe the most common Old World diseases that afflicted the New World.
4. Evaluate the complicated role of disease on migration patterns in Africa.
5. Relate European problems with disease in terms of penetrating the African continent.
6. Discuss the role of disease in preserving habitat for many of the wild animals of Africa.
7. Describe the effects of the Irish Potato Famine on American history.
8. Summarize the causes of the Irish Potato Famine.
9. Recite the concept of the scapegoat in world history.
10. Associate disease with the practice of scapegoating.
11. Describe the relationship between disease symptoms and pathogen dispersal.
12. Explain how animal pathogens can develop into exclusively human pathogens.
13. Outline the basic methods employed by pathogens to move from an infected host to another host.
14. Identify where pathogens can be found when not infecting human hosts.
15. Define the terms in this unit including: reservoir, carrier, superspreader, etc.
16. Identify the causative agent, method of transmission, clinical symptoms, treatment and methods of prevention for smallpox.
17. Explain why the smallpox vaccine is not currently given to the general public and what type of event could cause that public health policy to change.

Historical Videos/Essays
African Cattle Complex (African sleeping sickness)
Jewish Diaspora (bubonic plague)
Irish Potato Famine (fungus)
Depopulation of the Americas and Oceania

Science Videos/Essays
Science Focus: How do diseases get around? (disease transmission)
Featured Disease: Smallpox

History Mystery: Even though there were impressive urban centers in the Western Hemisphere before the arrival of the Spaniards, why did Pre-Columbian civilizations in the New World not suffer nearly as much with epidemics that generally plagued urbanization in the Old World?

Reading Assignments

Texts
For Further Study
Unit 4. Effect on War/Nation Building

Learning Objectives
1. Outline the basic history of the Crusades.
2. Identify the problems with disease the Crusaders encountered.
3. Recognize the effects of the Crusades on history.
4. Recite the course of the Napoleonic invasion of Russia in 1812.
5. Describe the role of typhus in the defeat of Napoleon in 1812.
7. State the effects of disease on the course of the Spanish-American War of 1898.
8. Explain how the Spanish-American War led to the control of yellow fever.
9. Calculate the effects of disease on the outcome of World War I.
11. Describe the relationship between humans, their commensal microorganisms, opportunistic organisms, and true pathogens.
12. Outline the basic requirements for microorganisms to be pathogenic.
13. Elaborate on the mechanisms pathogenic bacteria use to gain access to their human hosts.
14. Explain the properties of human pathogens that allow them to damage their hosts.
15. Identify where pathogens are found when not infecting human hosts.
16. Define the terms in this unit including: commensals, exotoxins, pathogenicity, etc.
17. Identify the causative agent, method of transmission, clinical symptoms, treatment and methods of prevention for influenza.
18. Explain why the influenza vaccine is given each year to the general population.
19. Describe why influenza still has the capacity to cause a pandemic in the modern age of medicine.

Historical Videos/Essays
Crusades (cholera, leprosy, etc.)
Napoleon and the Conquest of Russia (typhus)
World War I and the Spanish Flu (influenza)
Spanish/American War (yellow fever)

Science Videos/Essays
Science Focus: How do microorganisms make us sick?
Featured Disease: Influenza

History Mystery: Where did the horrible Bubonic Plague originate, and how did it spread so disastrously through the world until the so-called Black Death killed perhaps half the people of Europe in the fourteenth century?

Reading Assignments:
Text

For Further Study:
**Unit 5. Effect on Politics**

**Learning Objectives**

1. Compare the theories concerning the origin of the great European syphilis epidemics in the 1500s. Which of these theories do you feel has the strongest evidence and why?
2. Review the relationship between smallpox and George Washington.
3. Describe the effects of smallpox on the American Revolution.
4. Analyze the effects of yellow fever on the political situation in 1793 Philadelphia.
5. Recognize the changes yellow fever brought to urban problems.
6. Outline the assassination of James A. Garfield.
7. Define the role of infection in the death of President Garfield.
8. Discuss the ways syphilis affected European monarchies.
10. Calculate the role of syphilis in the life of Tsar Ivan the Terrible.
11. Outline the function of basic anatomical barriers to prevent pathogens from entering the human body.
12. Elaborate on the three general responses of innate immunity and why they are always on alert for invading organisms.
13. Explain the interaction between antigens and antibodies that allows for such specificity in the adaptive immune response.
14. Describe how vaccines (immunizations) take advantage of adaptive immunity to provide long lasting immunity.
15. Identify how adaptive immunity can cause health problems in some individuals.
16. Define the terms in this unit including: antibodies, inflammation, lymphocyte, etc.
17. Identify the causative agent, method of transmission, clinical symptoms, treatment and methods of prevention for syphilis.
18. Explain why syphilis can have long-term health effects if it is not treated early in the infectious process.

**Historical Videos/Essays**

George Washington and Smallpox
1793 Philadelphia and Yellow Fever
The Killing of James Garfield
European Monarchies (syphilis)
Gerald Ford and Swine Flu (influenza)

**Science Videos/Essays**

Science Focus: Why aren’t we all dead? (Body’s defenses against disease/vaccinations)
Featured Disease: Syphilis

**History Mystery:** It is common for historians to indicate that while the Europeans exported horrible diseases such as smallpox and measles to the Americas, the Indians “got even” by sending back to the Old World the scourge of syphilis, but is this really true?

**Reading Assignments:**


**For Further Study**
Unit 6. Effect on the Arts

Historical Videos/Essays
Elizabethan Literature
Victorian literature (TB)
AIDS and the Arts
Something on Visual Arts

Science Videos/Essays
Science Focus: Emerging diseases
Featured Disease: HIV

History Mystery: While HIV and Ebola emerged as human diseases at about the same time, why did AIDS become an international pandemic while Ebola did not?

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