Curriculum Proposal Cover Sheet – form is available on-line as an interactive PDF

LSC Use Only Proposal No:	*UWUCC Use Only* Proposal No: 13-45
LSC Action-Date: App - 10/10/13	UWUCC Action-Date: App-10/22/13 Senate Action Date: App - 11/5/13

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person(s)	Email Address
Carl Luciano	**luciano@iup.edu**
Proposing Department/Unit	Phone
Biology	**7-2352**

Check all appropriate lines and complete all information. Use a separate cover sheet for each course proposal and/or program proposal.

1. Course Proposals (check all that apply)

_____ New Course _____ Course Prefix Change _____ Course Deletion

__X__ Course Revision _____ Course Number and/or Title Change __X__ Catalog Description Change

Current course prefix, number and full title: **BIOL 119 Emerging Diseases**
Proposed course prefix, number and full title, if changing:

2. Liberal Studies Course Designations, as appropriate

__X__ This course is also proposed as a Liberal Studies Course (please mark the appropriate categories below)

_____ Learning Skills __X__ Knowledge Area _____ Global and Multicultural Awareness _____ Writing Intensive (include W cover sheet)

_____ Liberal Studies Elective (please mark the designation(s) that applies – must meet at least one)

_____ Global Citizenship _____ Information Literacy _____ Oral Communication

_____ Quantitative Reasoning _____ Scientific Literacy _____ Technological Literacy

3. Other Designations, as appropriate

_____ Honors College Course _____ Other: (e.g. Women's Studies, Pan African)

4. Program Proposals

_____ Catalog Description Change _____ Program Revision _____ Program Title Change _____ New Track

_____ New Degree Program _____ New Minor Program _____ Liberal Studies Requirement Changes _____ Other

Current program name:

Proposed program name, if changing:

5. Approvals	Signature	Date
Department Curriculum Committee Chair(s)		3/29/13
Department Chairperson(s)		3/29/13
College Curriculum Committee Chair		5/9/13
College Dean		5/9/13
Director of Liberal Studies (as needed)		10/10/13
Director of Honors College (as needed)		
Provost (as needed)		
Additional signature (with title) as appropriate		
UWUCC Co-Chairs	Gail S Sechrist	10/22/13

Part II

New Syllabus of Record

I. Catalog Description

BIOL 119 Emerging Diseases 3c-0l-3cr

Prerequisites: Non-Biology Department majors and minors only

Introduces infectious diseases and their biological basis as well as the social, historical and ethical consequences of these types of afflictions. Covers background material such as the germ theory of disease, the cell theory, disease transmission and the structure of scientific knowledge at a fundamental level. Emphasizes ecology, epidemiology, evolution and control of infectious agents as well as prevention and treatment of infectious disease. Includes specific cases of emerging or re-emerging diseases with an emphasis on current events related to disease outbreaks. (Does not count toward Biology Electives, Controlled Electives, or Ancillary Sciences for Biology majors and minors.)

II. Course Outcomes and Assessment (Expected Undergraduate Student Learning Outcomes-EUSLO)

The student will be able to:
Objective 1
Define the general characteristics of the major groups of agents that cause infectious disease

Expected Student Learning Outcomes 1
Informed Learners

Rationale
Assignments and exams will require students to name the major groups of biological agents that cause infectious disease, state the differences among the groups and to recognize illustrations or give examples of each group.

Objective 2
Explain the use of the scientific method as it is used to investigate infectious disease and improve public health.

Expected Student Learning Outcome 2
Empowered Learners

Rationale
Assignments and exams will require students to recognize, explain and discuss the steps of the scientific method as used in case studies of infectious disease investigations.

Objective 3
Appraise the risk of infectious disease in modern society.

Expected Student Learning Outcomes 1 and 2
Informed Learners and Empowered Learners

Rationale
Assignments and exams will require students to describe, discuss and explain the routes of transmission, portals of entry and risk factors for infectious diseases. Assignments and exams will also require students to criticize and examine the effectiveness of the common strategies for disease prevention.

Objective 4
Define, classify and analyze the natural processes that influence disease ecology and shape the evolution of infectious disease agents.

Expected Student Learning Outcomes 1 and 2
Informed Learners and Empowered Learners

Rationale
Assignments and exams will require students to recognize and define the impacts of factors such as climate change, habitat disruption, economic forces, technological improvements and human behavioral changes on the patterns of infectious disease. Assignments and exams will also require students to examine, compare and contrast the events of real-life outbreaks.

Objective 5
Appraise and evaluate the components of a society's response to challenges posed by emerging infectious disease.

Expected Student Learning Outcome 3
Responsible Learners

Rationale
Assignments and exams will require students to evaluate the impacts and influences of political and economic variables on public health practices and priorities. Assignments and exams will require students to assess and evaluate risks and benefits associated with personal and public health decisions.

III. Course Outline

Unit One: Introduction **(14 hrs.)**

- Hypotheses, Experiments, Theories (1 hr.)
  Structure of science and its empirical basis
  Types of data involved in biomedical and epidemiological research

- The Cell Theory (2 hrs.)
  - Evidence for the Cell Theory
  - Types of cells and their characteristics
- The Germ Theory of Disease (2 hrs.)
  - Early ideas about disease
  - Sanitarians, progressives and urban reform
  - The work of Pasteur, Koch and others establishes the modern Germ Theory
- Disease Transmission (2 hrs.)
  - Nomenclature
  - Routes of transmission and portals of entry
  - Examples
- Body Defenses Against Infectious Disease (1 hr.)
  - Physical and chemical defenses
  - Innate immunity
  - Adaptive immunity and vaccination
- The Eradication of Smallpox (1 hr.)
  - Brief history of smallpox disease
  - Why smallpox was a good candidate for eradication
  - Eradication campaign of the 1970s, including social and political factors
- Health Transitions (2 hrs.)
  - Technological advances of the 20th Century (antibiotics, vaccination, and sanitation) lead to the "Age of Optimism"
- The Rise of the "Disease Cowboy" culture (3 hrs.)
  - Typhoid and the incarceration of Typhoid Mary
  - Brazilian outbreak of bacterial meningitis and more recent outbreaks
  - US intervention in Lassa Fever, Machupo and other outbreaks

Exam One **(1 hr.)**

Unit Two: Microbe Magnets **(13 hrs.)**

- Urban Centers of Disease (1 hr.)
  - Diseases of dirt and overcrowding: tuberculosis, cholera, syphilis
- Legionnaire's Disease (1 hr.)
  - Philadelphia outbreak of 1976 and the federal response
  - Problematic identification of causative agent
  - An old disease gets a new name
- Feminine Hygiene and Toxic Shock Syndrome (1 hr.)
  - Women join the workforce and alter vaginal ecology
- Ebola and related filoviruses (3 hrs.)
  - Outbreaks in Marburg, Yambuku, Kikwit and Reston
- Parasitic Diseases (2 hrs.)
  - Malaria, Toxoplasmosis, macroscopic parasites
- Emerging Tick-borne Diseases (1 hr.)
  - Lyme Disease
  - Ehrlichiosis

Viral Diseases

- Polio in the 20th Century (3 hrs.)
  - An emerging disease associated with clean water
  - Polio hysteria
  - The Sabin/Salk Vaccine War
  - Eradication campaign
- Discussion of Supplemental Reading (1 hr.)

Exam Two **(1 hr.)**

Unit Three: Emerging Viruses **(13 hrs.)**

- The Original "Swine Flu" of 1976 (2 hrs.)
  - Outbreak among US Army troops
  - Vaccine controversy and fiasco
- Influenza Pandemics in 1918 and 2009 (2 hrs.)
  - Possible sources of 1918 virus and Spanish Flu pandemic
  - Multiple genetic reassortments and the new H1N1 2009 strain
- Reconstruction of the 1918 Flu Virus (2 hrs.)
  - Taubenberg and the Armed Forces Institute of Pathology specimens
  - Hultin's work with frozen samples from Alaska
  - What can we learn from the reconstructed Spanish Flu virus and is it worth it?
- Hantaviruses and the "Navajo Flu" (1 hr.)
- Hypotheses About the Origins of HIV/AIDS (2 hrs.)
  - Natural history of HIV and related viruses
  - Competing hypotheses (Cut Hunter, Heart of Darkness, OPV, Used Syringes) and the evidence for/against each
- Political and Societal Reaction to HIV/AIDS (3 hrs.)
  - The conservative establishment's attitude toward a disease of "Homosexuals, Haitians and Heroin addicts"
  - Competing priorities within the gay community
  - Discovery of the AIDS virus-who gets the credit?
  - The "Age of Optimism" ends
- Discussion of Supplemental Reading (1 hr.)

Culminating Experience: Exam Three (2 hrs. during Final Exam Week)

IV. Evaluation Methods

60% Exams

10% Writing Assignments

20% Supplemental Reading

10% Class Participation: There will be a number of assigned in-class discussion questions during the semester. Students will receive a set of discussion questions for each chapter in the textbook. They will form groups in class to discuss and answer the questions, and they will turn in a written copy of their answers for credit.

V. Grading Scale

Grading Scale: A= 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 59% and below

VI. Undergraduate Course Attendance Policy

The course attendance policy will follow the IUP University-wide undergraduate catalog attendance policy.

VII. Required Textbook

Garrett, Laurie. 1995 The Coming Plague. Penguin Books, New York, ISBN # 0 14 02.5091 3.

This is an older book but it is not out of date because it uses a narrative and highly personal approach to its topics rather than an expository or pedantic approach. The author consistently presents material from the perspective of participants in historical events (often via interviews) or of individuals who have actually suffered from the diseases being discussed. In 2012 Garrett's book was listed on Slate.com 2012 as one of the "best books" on pandemics available for non-scientists and was also the consensus choice as a non-majors textbook by the educators' listserv of the American Society for Microbiology.

Supplemental Non-textbook Reading: (Choose Two)

Kolata, Gina. 1999. Flu: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus That Caused It. Farrar, Straus, and Giroux, New York, ISBN # 0-374-15706-5.

Nagami, Pamela. 2002. The Woman with a Worm in Her Head: And Other True Stories of Infectious Disease. St. Martin's Griffin, New York, ISBN #0-312-30601-6

Quammen, David. 2012. Spillover: Animal Infections and the Next Human Pandemic. W. W. Norton, New York, ISBN #978-0-393-06680-7.

Sachs, Jessica S. 2007. Good Germs, Bad Germs: Health and Survival in a Bacterial World. Hill and Wang (Farrar, Straus and Giroux), New York, ISBN-13: 978-0-8090-5063-5.

Suggested Readings

Barry, John M. 2004. The Great Influenza. Viking Press, New York.

Bourdain, Anthony 2001. Typhoid Mary-an Urban Historical. Bloomsbury Press, New York.

Crosby, Molly Caldwell 2006. The American Plague. Berkeley Publishing Group, New York.

Fenn, Elizabeth A. 2001. Pox Americana: the Great Smallpox Epidemic of 1775-1782. Hill and Wang (Farrar, Straus and Giroux), New York.

Garrett, Laurie 2000. Betrayal of Trust: The Collapse of Global Public Health. Hyperion, New York.

Hochschild, Adam 1998. King Leopold's Ghost. Houghton Mifflin, Boston.

McNeill, W. H. 1976. Plagues and Peoples. Anchor Books, New York.

Oshinsky, David M. 2006. Polio: An American Story. Oxford University Press, Oxford

VIII. Special Resource Requirements

None

IX. Bibliography

Baron, Ellen Jo, Robert S. Chang, Dexter H. Howard, James N. Miller and Jerrold A. Turner. 1994. Medical Microbiology A Short Course. John Wiley and Sons, New York.

Bauman, Robert W. and Elizabeth Machunis-Masuoka. 2010. Microbiology with Diseases by Taxonomy (3rd ed..) Prentice-Hall. New York.

Bazin, Herve. 2000. The Eradication of Smallpox. Academic Press, San Diego.

Bookchin, Amy and Jim Schumacher. 2004. The Virus and the Vaccine. St, Martin's Griffin, New York.

Brown, Kevin. 2006. The Pox: the Life and Near Death of a Very Social Disease. Sutton Publishing, Phoenix Mill.

Bud, Robert. 2007. Penicillin: Triumph and Tragedy. Oxford University Press, Oxford.

Collier, Richard. 1974. The Plague of the Spanish Lady. Atheneum, New York.

Crosby, Alfred W. 1989. America's Forgotten Pandemic: The Influenza of 1918. Cambridge University Press, Cambridge.

Cartwright, F. F., and M. D. Biddis. 1972. Disease and History. Dorset Press, New York.

Crawford, Dorothy H. 2007. Deadly Companions: How Microbes Shaped Our History. Oxford University Press, Oxford.

Curtin, Philip D. 1998. Disease and Empire. Cambridge University Press, Cambridge.

Despomier, D., Robert W. Gradz, Peter J. Hotez and Charles A. Knirsch 2005. Parasitic Diseases (5th ed.). Apple Trees Productions LLC, New York.

Dubos, R. 1960. Pasteur and Modern Science. Anchor Books, New York.

Dubos, R. 1959. Mirage of Health: Utopias, Progress, and Biological Change. Harper and Row, New York.

Duffy, John. 1993. From Humors to Medical Science A History of American Medicine (2nd ed.) University of Illinois Press, Champaign

Ewald, Paul W. 1994 Evolution of Infectious Disease. Oxford University Press, Oxford.

Hammonds, Evelynn Maxine. 1999. Childhood's Deadly Scourge. Johns Hopkins Press, Baltimore.

Hayden, Deborah. 2003. Pox: Genius, Madness and the Mysteries of Syphilis. Perseus Books, New York.

Hopkins, Donald R. 2002. The Greatest Killer: Smallpox in History. University of Chicago Press, Chicago.

Johnson, Steven. 2006. The Ghost Map: The Story of London's Most Terrifying Epidemic--and How It Changed Science, Cities, and the Modern World. Riverhead Books, New York.

Jones, James H. 1981. Bad Blood. The Free Press (MacMillan), New York.

Karlen, A. 1995. Man and Microbes. G. P. Putnam's Sons, New York.

Knipe, D. M. and Peter M. Hawley (eds.). 2007. Fields Virology (5th ed.). Lippincott Williams and Wilkins, Philadelphia.

Kraut, Alan M. 1994. Silent Travellers: Germs, Genes and the "Immigrant Menace". Basic Books (HarperCollins), New York.

Lax, Eric. 2005. The Mold in Dr. Florey's Coat. Owl Books, New York.

Lechevalier, H. A. and M. Solotorovsky. 1965. Three Centuries of Microbiology. McGraw-Hill, New York.

Leavitt, Judith Walzer. 1996. Typhoid Mary: Captive to the Public's Health. Beacon Press, Boston.

McCormick, Joseph B. and Susan Fisher-Hoch. 1996 Level 4 Virus Hunters of the CDC. Turner Publishing Co., Atlanta.

Morse, S. S. 1993. Emerging Viruses. Oxford University Press, New York.

Nuland, Sherwin B. 2003. The Doctor's Plague. Atlas Books (W. W. Norton), New York.

Oldstone, Michael. 1998. Viruses, Plagues and History. Oxford University Press, Oxford.

Peters, C. J. and Mark Olshaker. 1997. Virus Hunter: Thirty Years of Battling Hot Viruses Around the World. Doubleday, New York.

Pepin, Jacques. 2011. The Origins of AIDS. Cambridge University Press, Cambridge.

Pierce, John R. and Jim Writer. 2005. Yellow Jack: How Yellow Fever Ravaged America and Walter Reed Discovered its Deadly Secrets. John Wiley and Sons, New York.

Piot, Peter. 2012. No Time to Lose: A Life in Pursuit of Deadly Viruses. W.W. Norton, New York.

Rocco, Fiammetta. 2004. Quinine: Malaria and the Quest for a Cure That Changed the World. Perennial (HarperCollins), New York.

Rogers, M. 1973. Biohazard. Avon Books, New York.

Rogers, Naomi. 1996. Dirt and Disease: Polio Before FDR. Rutgers University Press, New Brunswick.

Ryan, F. 1992. The Forgotten Plague: How the Battle Against Tuberculosis Was Won - and Lost. Little, Brown and Co. Boston.

Sapp, J. 1994. Evolution By Association: A History of Symbiosis. Oxford University Press, Oxford.

Shilts, Randy. 1987. And the Band Played On: Politics, People and the AIDS Epidemic. St. Martins Press, New York.

Spielman, Andrew and Michael D'Antonio. 2001. Mosquito. Hyperion, New York.

Tomes, Nancy. 1998. The Gospel of Germs. Harvard University Press, Cambridge.

Thomas, Gordon and Max Morgan-Witts. 1982. Anatomy of an Epidemic. Doubleday and Co. New York.

Thompson, Marilyn W. 2003. The Killer Strain. HarperCollins, New York.

Tucker, Jonathan B. 2001. Scourge-The Once and Future Threat of Smallpox. Grove Press, New York.

Watts, Sheldon. 1997. Epidemics and History: Disease, Power and Imperialism. Yale University Press, New Haven.

Wills, Christopher. 1996. Yellow Fever Black Goddess: The Coevolution of Peoples and Plagues. Perseus Publishing. Cambridge.

Wolfe, Nathan. 2011. The Viral Storm: The Dawn of a New Pandemic Age. Times Books, New York.

Zimmer, Carl. 2011. A Planet of Viruses. University of Chicago Press, Chicago.

Zimmerman, Barry. 2002. Killer Germs. McGraw-Hill New York.

Zinsser, H. 1963. Rats, Lice and History. Black Dog and Leventhal, New York.

2. Summary of the Proposed Revisions

- Objectives: The course objectives were revised from the original syllabus of record and aligned with the Expected Undergraduate Student Learning Outcomes (EUSLO) and Common Learning Objectives found in the criteria for a non-laboratory Natural Sciences course.

- Common Learning Objectives for a non-lab Natural Sciences course are met in the content portion of the proposed course through a number of general revisions.

  These objectives are:

  Examine a body of knowledge of natural science that will contribute to an understanding of the natural world and an appreciation of the impacts that natural sciences have on the lives of individuals and the world in which they live.

  Understand the difference between science as a knowledge base and science as a process that generates knowledge.

  Develop an inquiring attitude consistent with the tenets of natural science

  Understand the empirical nature of science

Understand the concept of bias and the efforts to which scientists go to avoid it

- Updated Non-textbook Supplemental Readings with additional optional titles
- Updated Suggested Readings with additional titles
- Updated and enhanced course bibliography
- Updated and reorganized course content to place a stronger emphasis on infectious diseases
- The language of the pre-requisites and the catalog description were changed to reflect that the proposed course is a Liberal Studies offering in Biology.

3. Justification/Rationale for the revision

BIOL 119 is a course approved as a Liberal Studies Non-Laboratory Natural Science course and is being revised to meet the new curriculum criteria in this category.

4. Old Syllabus of Record

Attached (from UWUCC archives)

Answers to Liberal Studies Questions

1) Not Applicable. A single instructor will teach this course.

2) There are three main ways that the course includes the contributions of women and racial/ethnic/other minority groups. First, the required text for the course is written by a woman who is an articulate, knowledgeable and even passionate commentator on public health issues. Ms. Garrett is careful to emphasize in her writings the contributions of women and their leadership roles in the American public health system. One of her most effective writing techniques is to relate disease incidents from the viewpoint of real-life people and she is always careful to include the non-white and/or non-male perspective. For example, in Chapter 12 "Feminine Hygiene-As Debated Mostly by Men" she uses Toxic Shock Syndrome induced by superabsorbent tampons to introduce disease problems caused by new, highly-virulent *Staphylococcus aureus* strains and to comment on the socioeconomic pressures that led women to use these devices. In Chapter 10 "Distant Thunder" she uses an African-American perspective to illustrate the role of illegal drug use in the transmission of blood-borne diseases such as Hepatitis B and to emphasize the increased disease risk in economically-disadvantaged minority populations. Second, supplemental readings highlight women's contributions and roles. In The Hot Zone, one of the non-textbook supplemental readings, the protagonist is Dr. Nancy Jaax, a woman who juggles a career as a military doctor with her responsibilities as a parent and spouse. Dr. Jaax was the lead laboratory investigator for the US Army during the 1989 Ebola outbreak in

Reston, VA and is one of the world's most highly-respected authorities on "hot" viruses. The story of the 1989 outbreak is told primarily from her point of view. A second supplemental reading, dealing with the Spanish Flu pandemic of 1918, is authored by Ms. Gina Kolata, a prominent writer of "popular" science whose work has appeared in Science, the New York Times and other national publications. She provides women's perspectives on the pandemic and outlines the contributions of women to our modern understanding of the virus and its spread. Another of the supplemental readings The Woman With a Worm in Her Head, is authored by Dr. Pamela Nagami, a practicing physician with an infectious disease specialty who also provides a clinician's perspective. Third, content material presented in lectures has an emphasis on women who contributed to our the understanding of infectious disease including, for example, Dr. Sara Josephine Baker, a prominent public health physician of the early 20th Century.

3) The proposed course requires two non-textbook supplemental readings chosen from a list of four. These accounts use non-technical language and an emphasis on story-telling to describe actual disease outbreaks and their investigation.

4) This is an introductory course. It differs from our Liberal Studies Natural Science lab courses (BIOL 103, 104 and 106) in that it has a focus on a single theme: emerging infectious disease, rather than a broad view of biology. The Liberal Studies lab course BIOL 106 Human Genetics and Health includes a section on vaccines but there is no significant overlap between BIOL 106 and the proposed course.

Answers to Course Analysis Questionnaire

A1. The course is a three-credit non-laboratory science course that would be a part of the 4-3 science option of the Liberal Studies requirements. It will be exclusively for Non-Biology Department majors and minors.

A2. The course does not require a change in any existing course or program.

A3. The revised course has never been offered at IUP but the original course has been offered approximately 12 times since 1997 as either BIOL 281 Special Topics or as BIOL 119.

A4. The course will not be a dual-level course.

A5. The course will not be offered for variable credit.

A6. Several institutions offer similar courses, including those on the following list.

MBI 111 Microorganisms and Human Disease-Miami University of Ohio
http://www.units.muohio.edu/reg/bulletins/GeneralBulletin2012-2013/mbi-111-microorganisms-and-human-disease-3-mpf.htm

BI 148 Epidemics, Disease, and Humanity-Boston College

Bio 150 Emerging Diseases-William and Mary
http://guides.swem.wm.edu/biology150emergingdiseases

BI 345 Emerging Infectious Diseases-SUNY Fredonia

BIOL 10310 New and Emerging Diseases-Ithaca College
http://www.ithaca.edu/biology/303_10310.html

A7. The content of the course is not recommended or required by any professional, accrediting authority, law or any other external agency.

A8. The course will be taught by one instructor.

A9. The content of the proposed course does overlap with the content of some microbiology-based courses for Biology Department majors/minors but these students are excluded from the proposed course. The content of the proposed course also overlaps to some extent with the content of BIOL 241 General Microbiology, a required course for some CHHS majors and for CNSM Natural Sciences Pre-professional majors. As noted earlier in this proposal, there is an insignificant overlap with the content of the Liberal Studies Lab Science course BIOL 106 Human Genetics and Health.

A10. There will be seats in this course available for the School of Continuing Education.

A11. Faculty resources are currently adequate.

A12. Resources for the course are adequate.
Space: Classroom space is available and adequate.
Equipment: Projection facilities, computers and internet facilities are adequate.
Laboratory Supplies and Consumables-Not applicable
Library Materials-The Stapleton library has sufficient on-line and interlibrary resources for this course.
Travel Funds-None needed

A13. None of the resources for this course are funded by a grant.

A14. Fall of odd-numbered years

A15. One section

A16. Student enrollment will be limited by the size of the classroom.

A17. No professional society recommends enrollment limits or parameters for this course.

Emerging Diseases Sample Assignment and Rubric: (from Spring, 2011)

POLIO

Introduction

The purposes of this assignment are: (1) to give you additional familiarity with a disease that is a "folk memory" in the United States, (2) to provide you with some experience and background in tracking down disease history or doing searches for disease information on the internet (3) to acquaint you with some of the interesting stories about polio that people have to tell, (4) to assemble information that we might use collectively as a sort of "class project", and (5) to make you think critically about the impact of infectious disease on the human condition.

Instructions: PLAN A

1) With many of you heading home for the Spring Break holiday, your first choice for completing this assignment should be the older members of your family. Talk with parents, aunts, uncles, grandparents, etc. about their memories of polio. Try to get as much information as you can, with specific names, dates and places if possible. Pay particular attention if you learn of a specific story. Write down your information as a Word document and save the document.

2) Write a brief reaction to your data, summarizing your own reaction to the story as well as how the information in the story relates to what you already knew or did not know about polio.

3) Be sure to relate your reaction to the content material on polio that we have covered in class including lecture material, handouts, information sheets, video such as YouTube clips and any other materials.

Instructions: PLAN B (If you can't do Plan A or if you don't get any information)

1) Log on to the internet to complete the assignment.

2) Use a search engine to locate a story of polio that has been posted on the internet by somebody outside your family.

3) Print out the story and generate a hard copy of the main page of the site that you use (including url).

4) Write a brief summary of the on-line information (one paragraph or so).

5) In a separate paragraph, summarize your own reaction to the story as well as how the information in the story relates to what you already knew or did not know about polio.
6) Be sure to relate your reaction to the content material on polio that we have covered in class including lecture material, handouts, information sheets, video such as YouTube clips and any other materials.

PLAN A AND PLAN B

1) Turn in your hard copy on Tuesday, March 22 at 3:30 PM. Turn in the assignment in hard copy format. No electronic submissions will be accepted.

Grading:

This Writing Assignment will be graded on how well you follow the guidelines above up to a total of 10 points. Also see the grading rubric below.

(1) The part of the assignment that you write must be typed or neatly written on one or two pages, maximum. Assignments not in compliance will not be graded.

(2) You should use standard English and spelling in your assignment, but you may include scientific jargon if appropriate. You are also encouraged to use everyday English if it helps you to express your ideas better but assignments with a large number of spelling or other errors will be returned ungraded for revision.

(3) Assignments will be graded on a 10-point scale with points assigned according to the following rubric.

POLIO ASSIGNMENT GRADING RUBRIC

9-10 pts: You have (A) effectively presented new information with your interview or summarized the internet article AND (B) you have effectively related the material to course material AND (C) you have articulated your own thought and ideas in your reaction.

7-8 pts: You have effectively accomplished 2 out of the 3 from among (A), (B) and (C) above.

5-6 pts: You have effectively accomplished 1 out of the 3 from among (A), (B) and (C) above but have not effectively addressed the other two.

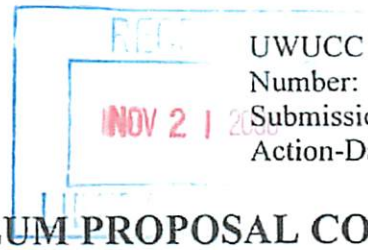
3-4 pts: You have not effectively addressed any of the components of the assignment.

1-2 pts: I get the feeling you did not read the article and/or the directions very carefully. You ought to be able to do a better job.

0 pts: You did not turn in a paper.

Emerging Diseases

LSC Use Only
Number: _____
Submission Date: _____
Action Date: _____



UWUCC USE ONLY
Number: 00-42
Submission Date: _____
Action-Date: UWUCC App 3/13/01
Senate App 4/3/01

PART I. CURRICULUM PROPOSAL COVER SHEET

University-Wide Undergraduate Curriculum Committee

I. **CONTACT**

Contact Person Dr. C. S. Luciano Phone 357-2427
Department Biology email: LUCIANO@GROVE.IUP.EDU

II. **PROPOSAL TYPE (Check All Appropriate Lines)**

XX COURSE — Emerging Diseases (Suggested 20 character title)

XX New Course* — BIOL 119 Emerging Diseases (Course Number and Full Title)

___ Course Revision _____ (Course Number and Full Title)

Rev.

XX Liberal Studies Approval for new or existing course — BIOL 119 Emerging Diseases (Course Number and Full Title)

___ Course Deletion _____ (Course Number and Full Title)

___ Number and /or Title Change _____ (Old Number and/or Full Old Title)

(New Number and/or Full New Title)

___ Course or Catalog Description Change _____ (Course Number and Full Title)

_____ PROGRAM: ___ Major ___ Minor ___ Track

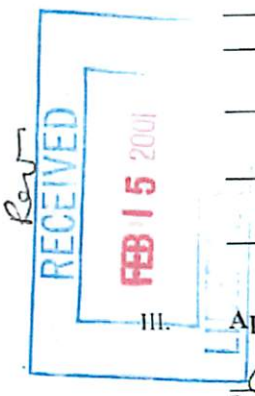
_____ New Program* _____

_____ Program Revision* _____

_____ Program Deletion * _____

_____ Title Change _____

Rev.



III. **Approvals** (Signatures and date)

Arthur C. Hulse
Department Curriculum Committee

W. Barkley Butler
Department Chair

College Curriculum Committee

John D. Eck
College Dean

Director of Liberal Studies (where applicable)

* Provost (where applicable)

Emerging Diseases

LIBERAL STUDIES COURSE APPROVAL, PARTS 1-3: GENERAL INFORMATION CHECK-LIST

I. **Please indicate the LS category(ies) for which you are applying:**

LEARNING SKILLS:
____ First Composition Course
____ Second Composition Course
____ Mathematics

KNOWLEDGE AREAS:
____ Humanities: History
____ Humanities: Philos/Rel Studies
____ Humanities: Literature
____ Natural Sci: Laboratory
__X__ Natural Sci: Non-laboratory
____ Fine Arts
____ Social Sciences
____ Non-Western Cultures
____ Health & Wellness
____ Liberal Studies Elective

II. **Please use check marks to indicate which LS goals are primary, secondary, incidental, or not applicable. When you meet with the LSC to discuss the course, you may be asked to explain how these will be achieved.**

Prim	Sec	Incid	N/A	
X				A. Intellectual Skills and Modes of Thinking:
				1. Inquiry, abstract logical thinking, critical analysis, synthesis, decision making, and other aspects of the critical process.
X				2. Literacy--writing, reading, speaking, listening.
		X		3. Understanding numerical data.
				4. Historical consciousness.
X				5. Scientific Inquiry.
X				6. Values (Ethical mode of thinking or application of ethical perception).
X				7. Aesthetic mode of thinking.
		X		
X				B. Acquiring a Body of Knowledge or Understanding Essential to an Educated Person
	X			C. Understanding the Physical Nature of Human Beings
		X		D. Collateral Skills:
				1. Use of the library.
		X		2. Use of computing technology.

III. **The LS criteria indicate six ways that courses should contribute to students' abilities. Please check all that apply. When you meet with the LSC, you may be asked to explain your check marks.**

__X__ 1. Confront the major ethical issues which pertain to the subject matter; realize that although "suspended judgment" is a necessity of intellectual inquiry, one cannot live forever in suspension; and make ethical choices and take responsibility for them.

__X__ 2. Define and analyze problems, frame questions, evaluate available solutions and make choices.

__X__ 3. Communicate knowledge and exchange ideas by various forms of expression, in most cases writing and speaking.

__X__ 4. Recognize creativity and engage in creative thinking.

__X__ 5. Continue learning even after the completion of their formal education.

__X__ 6. Recognize relationships between what is being studied and current issues, thoughts, institutions, and/or events.

ANSWERS TO LIBERAL STUDIES QUESTIONS

(A) Not applicable. This course will be taught by a single instructor

(B) The course includes contributions and perspectives of ethnic/racial minorities and women as appropriate to subject matter in several ways. First, the required text for the course is written by a woman who is an articulate, knowledgeable and even passionate commentator on public health issues. Ms. Garrett is careful to emphasize in her writings the contributions of women and their leadership roles in the American public health system. She often uses real-life people to personalize disease incidents and always includes the non-white, non-male perspective. For example, in Chapter 12/"Feminine Hygiene (As Debated Mostly by Men)" she uses Toxic Shock Syndrome induced by super-absorbent tampons to introduce the problems caused by new, highly-virulent strains of *Staphylococcus aureus*. In Chapter 10/"Distant Thunder" she uses an African-American perspective to illustrate the role of illegal drug use in the transmission of blood-borne diseases such as Hepatitis B and to emphasize the increased disease risk of economically-disadvantaged minorities. Second, in The Hot Zone, one of the required non-textbook readings, the main "character" is Dr. Nancy Jaax. Dr. Jaax was the lead laboratory investigator for the US Army during the 1989 outbreak of Ebola in Reston, Va. and is one of the world's most highly-respected authorities on "hot" viruses. The story of the 1989 outbreak is told primarily from her point of view. Finally, the other non-textbook reading, dealing with the 1918 Spanish Flu pandemic, is authored by Ms. Gina Kolata, a prominent writer of "popular" science whose work appears regularly in *Science*, *The New York Times* and other national publications. She provides women's perspectives on the pandemic and outlines the contributions of women to our modern understanding of the influenza virus and its spread.

(C) The proposed course includes two non-textbook readings. These accounts use non-technical language and an emphasis on the personalities involved to describe actual disease outbreaks and their investigation.

(D) The proposed course differs from Principles of Biology I, our freshman majors course, in several important ways. First, the proposed course is less technical and provides less depth than the majors course. Second, the proposed course is not intended to provide mastery of a defined body of content material needed for upper-division courses in Biology. Instead, the proposed course is more topical in approach and more driven by student interest. In addition, the proposed course places a stronger emphasis on the discussion of current events than does our majors course. Finally, the proposed course does not have a lab, an important part of the majors course.

Liberal Studies Course Approval Form
Instruction Sheet

Use this form only if you wish to have a course included in a Liberal Studies Learning Skill or Knowledge Area category. Do not use this form for synthesis or writing-intensive sections; different forms are available for these. If you have questions, contact the Liberal Studies Office, 352 Sutton Hall, telephone 357-5715.

This form is intended to assist you in developing your course to meet IUP's Criteria for Liberal Studies and to arrange your proposal in a standard order for consideration by the Liberal Studies Committee (LSC) and the University-wide Undergraduate Curriculum Committee. When you have finished, your proposal will have these parts:

X Standard UWUCC Course Proposal Cover Sheet, with signatures (one page)

X Completed copy of LS General Information Check-List--Parts 1-3 of this form (one page)

X One sheet of paper for your answers to the four questions in Part IV of this form (one page)

X Completed check-list for each curriculum category in which your course is to be listed--e.g. Non-Western Cultures, Fine Arts, etc. (one page each) [Check-lists are found in the appendix to this Handbook.]

X Course syllabus in UWUCC format.

Note: If this is a new course not previously approved by the University Senate, you will also need answers to the UWUCC Course Analysis Questionnaire. These are not considered by the LSC but will be forwarded to the UWUCC along with the rest of the proposal after the LSC completes its review. For information on UWUCC procedures for new courses or course revisions, see appropriate sections of this Handbook.

Submit <u>one</u> (1) copy of the completed proposal to the Liberal Studies Office (352 Sutton Hall.) The Liberal Studies Committee will make its own copies from your original; the committee does reserve the right to return excessively long proposals for editing before they are duplicated. (If you happen to have extra copies of the proposal, you are invited to send multiple copies to the LSC to save unnecessary copying.)

Please Number All Pages

CHECK LIST -- LIBERAL STUDIES ELECTIVES

Knowledge Area Criteria which the course must meet:

X Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.

X Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.

X Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.

X Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Areas of Liberal Studies.

Liberal Studies Elective Criteria which the course must meet:

X Meet the "General Criteria Which Apply to All Liberal Studies Courses."

X Not be a technical, professional or pre-professional course.

Explanation: Appropriate courses are to be characterized by learning in its broad, liberal sense rather than in the sense of technique or preprofessional proficiency.. For instance, assuming it met all the other criteria for Liberal Studies, a course in "Theater History" might be appropriate, while one in "The Craft of Set Construction" probably would not; or, a course in "Modern American Poetry" might be appropriate, while one in "New Techniques for Teaching Writing in Secondary Schools" probably would not; or, a course on "Mass Media and American Society" might be appropriate, while one in "Television Production Skills" probably would not; or, a course in "Human Anatomy" might be appropriate, while one in "Strategies for Biological Field Work" probably would not; or, a course in "Intermediate French" might be appropriate, while one in "Practical Methods for Professional Translators" probably would not.

CHECK LIST -- NATURAL SCIENCES (Non-laboratory)

Knowledge Area Criteria which the course must meet:

X Treat concepts, themes and events in sufficient depth to enable students to appreciate the complexity, history and current implications of what is being studied; and not be merely cursory coverage of lists of topics.

X Suggest the major intellectual questions/problems which interest practitioners of a discipline and explore critically the important theories and principles presented by the discipline.

X Allow students to understand and apply the methods of inquiry and vocabulary commonly used in the discipline.

X Encourage students to use and enhance, wherever possible, the composition and mathematics skills built in the Skill Area of Liberal Studies.

Natural Science Criteria which the course must meet:

X Examine a body of knowledge of natural science that will contribute to an understanding of the natural world.

X Provide an understanding of the development of natural science theories and their modification.

X Teach students to formulate and test hypotheses.

X Provide an understanding of some of the "great moments" in the history of natural science and the individuals, including women and minorities, responsible for them.

Additional Natural Science Criteria which the course should meet:

X Encourage an appreciation of the complex interrelationship of natural science with the life of the individual.

X Develop in students the abilities necessary to cope with the consequences of natural science in the modern world.

X Develop an inquiring attitude consistent with the tenets of natural science, an attitude that is willing to expose fallacy on the basis of reason, that demands evidence for scientific assertions and yet is tolerant of hypotheses in the absence of contradictory evidence.

Part II. Description of Curricular Change

1. Syllabus of Record

I. Catalog Description

BIOL 119 Emerging Diseases 3c-01-3sh

3 credits
0 lab hours
3 semester hours

Prerequisite: Non-biology majors and non-biology minors only.

The course is intended primarily to provide the student with an understanding of the biological basis of infectious diseases and the social, historical and ethical consequences of these types of afflictions. The course covers background material such as the germ theory of disease and the cell theory at an introductory level. The course includes specific cases of emerging or re-emerging infectious diseases with emphasis on current events relating to disease outbreaks.

II. Course Objectives

As a result of participation in this course, students will:

(A) demonstrate understanding of the biological basis of infectious diseases, including the characteristics of the major groups of pathogens
(B) demonstrate understanding of the function of the immune system and other human systems as defenses against disease as well as the types of cures and prophylactic measures currently used to limit disease
(C) recognize the historical effects of societal changes, habitat disruptions and incursions on patterns of disease transmission
(D) recognize the potential effects of emerging infectious diseases on modern society,
(E) discuss contemporary disease outbreaks in context
(F) discuss risk of disease in their own lives and
(G) demonstrate understanding of the scientific method as it applies to medicine and public health

III. Detailed Course Outline

Topics and Activities for Unit One: Biological Background

Weeks 1-3:

- The Cell Theory: What are the differences among you, a virus and a bacterium? (0.5)
- The Germ Theory: What is it and how is it different from other theories of disease? What is the difference between pathogenesis and symbiosis? How do pathogens cause disease? (1.5)
- Defenses Against Infectious Disease: Why aren't we sick all the time and why can we only get some diseases once? (0.5)
- Disease Transmission: How do diseases get from one person to another? (0.5)
- Disease Prevention: How can we keep from catching diseases? (0.5)
- Video from series: Unseen Life on Earth (1)
- Discussion of Textbook Chapters 1-3 (3)

Week 3: Exam One

Topics and Activities for Unit Two: Bacterial Diseases

Weeks 3-7:

- Tuberculosis, the "White Plague" (1)
- Legionnaire's Disease, Pennsylvania's Own Emerging Disease (1)
- Food and Water-borne Bacterial Diseases (1)
- Toxic Shock Syndrome (1)
- Lyme Disease (1)
- Discussion of Textbook Chapters 9, 12, 13 (3)
- Three "Round Table" Discussions (3)

Week 7: Exam Two

Topics and Activities for Unit Three: Viral Diseases I

Weeks 8-11:

- Smallpox, An Extinct Virus (0.5)
- Polio: The Next Virus to be Eradicated? (0.5)
- Ebola and HIV: Central Africa's Emerging Diseases (2)
- Video on 1996 Ebola outbreak in Central Africa (1)
- Discussion of Textbook Chapters 3, 5, 7, 11 (3)
- Discussion of Supplemental Reading The Hot Zone (1)
- Three "Round Table" Discussions (3)

Week 11: Exam Three

Topics and Activities for Unit Four: Viral Diseases II and Diseases Caused by Other Agents

Weeks 12-14:

- Influenza-The Most Deadly Virus (1)
- Discussion of Supplemental Reading Flu (1)
- Hantaviruses (0.5)
- Mad Cow Disease and other Prion Diseases (0.5)
- Malaria and Parasitic Diseases in the Third World (1)
- Video on Influenza Pandemic of 1918 (1)
- Discussion of Textbook Chapters 6, 15, 17 (2)
- Two "Round Table" Discussions (2)

Final Exam Week: Exam Four

IV. Evaluation Methods

A. Types of Evaluation Used

1. Exams

The terminating activity for each of the four Units will be an hour exam with 3-5 essay questions. No fill-in-the-blank, matching or multiple-choice questions will be used. The test grades will be based entirely upon student writing. Essay questions will be derived from lecture material, class discussions and readings. The fourth exam will be scheduled during finals week but will not be a comprehensive exam. The four exams will be weighted equally in determining the final grade. Each exam will require students to demonstrate their understanding of the biological bases of the diseases covered in that section of the course, the use of the scientific method as it relates to public health issues, and the ability to place disease-related events in the proper historical and social context.

2. Written Summaries

During the semester, students will be given several reading assignments (e.g. selections from textbook chapters not discussed in class, from current journal articles, internet sites or from materials to be placed on reserve in the library). Students will be required to submit 500-word written summaries of the assigned readings. Approximately five summaries will be assigned during the semester and each summary will be equally-weighted in determining the final grade. Each summary will require students to demonstrate comprehension of the reading assignments, understanding of the basic biological principles involved and the ability to evaluate disease risk in their own lives.

3. Class Participation

(a) Discussion of Current Events (The Infectious Disease "Round Table")

Students will be required to survey reputable national periodicals (e.g. *The New York Times, Scientific American*, etc.), selected scientific journals (e.g. *Science, Nature, Journal of Virology*) or the world wide web in order to locate information dealing with current topics in the field of emerging infectious disease. On days when Round Table discussions are scheduled, students will bring to class a copy of an article they have selected and give a brief oral report on the article. Round Table discussions will be organized during the semester as follows. The class will be divided into as many as four cohorts (depending upon enrollment) each consisting of approximately the same number of students. Members of each cohort will present articles in rotation at successive Round Tables. This strategy is intended to reduce the number of presentations at each Round Table to a number that allows for thorough discussion (no greater than six per meeting, assuming an enrollment of 24). Thus during the eight Round Tables of the semester, each student will be required to contribute and report on at least two articles. The instructor will evaluate each article on the basis of currency, relevance to course material and quality of source (e.g. *The New York Times* is superior to *USA Today* as a source of scientific information). The instructor will evaluate each report on the basis of the student's ability to discuss, answer questions about and relate the content of the article to other topics discussed in class. The articles/reports will be equally-weighted in determining the final grade. Each Round Table will require students to demonstrate an understanding of basic biological principles, the ability to place infectious disease issues in the appropriate social and historical context and familiarity with electronic and print resources.

(b) Class Discussions

Students will be required to participate in regular class discussions and will be encouraged to speak out from their own individual point of view as well as to demonstrate understanding of course material. The instructor will monitor each student's activity during the course of the semester and keep a "participation log" for grading purposes. The instructor will evaluate each student's contributions to class discussions on the basis of relevance, ability to relate material to a personal perspective and knowledge of content material. Each discussion will require students to demonstrate an understanding of basic biological principles, the ability to place infectious disease issues in the appropriate social and historical context, familiarity with electronic and print resources, the ability to evaluate disease risk in their own lives and the ability to discuss these issues with their peers.

B. Grade Breakdown

A1. Exams (four at 15% each)	60%
A2. Written Summaries (total of 5)	20%
A3. Class Participation	
Current Events (at least two articles)	10%
Discussion (monitored daily)	10%

V. Required Textbook, Supplemental Books and Readings

A. Textbook:

The Coming Plague by Laurie Garrett, 1995, Penguin Books, New York, ISBN # 0 14 02.5091 3.

B. Non-Textbook Readings (Required):

Selections from:

Flu: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus That Caused It, by Gina Kolata, 1999, Farrar, Straus, and Giroux, 290 pp., New York.

The Hot Zone: A Terrifying True Story, by Richard Preston, 1994, Random House, 306 pp., New York.

C. Supplemental Readings (Optional):

America's Forgotten Pandemic-The Influenza of 1918 by Alfred Crosby, 1976, Cambridge University Press, Cambridge.

The Forgotten Plague: How the Battle Against Tuberculosis Was Won and Lost, by Frank Ryan, MD, 1993, Little, Brown and Company, Boston.

Guns, Germs and Steel: The Fates of Human Societies, by Jared Diamond, W. W. Norton, New York, 1997.

Level 4: Virus Hunters of the CDC, by Joseph B. McCormick, M.D., and Susan Fisher-Hoch, with Leslie Alan Horvitz, 1996, Turner Publishing, Inc., Atlanta.

Plagues and Peoples, by William H., McNeill, 1976, Anchor Books / Doubleday, New York.

VI. Special Resource Requirements

Other than the textbook and required non-textbook readings, students are not expected to supply any materials or equipment for the course. There is no lab fee associated with the course.

VII. Bibliography

Baron, Ellen Jo, Robert S. Chang, Dexter H. Howard, James N. Miller, and Jerrold A. Turner, Medical Microbiology: A Short Course, Wiley-Liss / John Wiley & Sons, Inc., New York, 1994, ISBN # 0 471 56728 0.

Biddle, Wayne, A Field Guide to Germs, Anchor, 1996. ISBN # 0 385 48426 7.

Bray, R.S., Armies of Pestilence: The Effects of Pandemics on History, Parkwest Publications, 1998. ISBN # 0 718 82949 2.

Cartwright, Frederick F., with Michael D. Biddiss, Disease and History, Dorset Press, New York, 1972. ISBN # 0 750 92315 6.

Collier, Richard, The Plague of the Spanish Lady: The Influenza Pandemic of 1918-1919, Allison & Busby, 1996, ISBN # 0 749 00246 8.

Cook, Noble David, Born to Die: Disease and New World Conquest, 1492-1650 (New Approaches to the Americas, Cambridge University Press, 1998, ISBN # 0 521 62730 3.

Cooper, John I., and F. O. MacCallum, Viruses and the Environment, second edition, Chapman & Hall, London, 1995, ISBN # 0 412 45120 4.

Crosby, Alfred W., Ecological Imperialism: The Biological Expansion of Europe, 900-1900 (Studies in Environment and History), Cambridge University Press, 1993, ISBN # 0 521 45690 8.

Davies, Peter, Catching Cold, Michael Joseph, 1999, ISBN # 0 718 14349 3.

Desowitz, Robert S., New Guinea Tapeworms and Jewish Grandmothers: Tales of Parasites and People, W.W. Norton & Company, 1987, ISBN # 0 393 30426 4.

Desowitz, Robert S., Who Gave Pinta to the Santa Maria?: Torrid Diseases in a Temperate World, Harvest Books, 1998, ISBN # 0 156 00585 9.

Ewald, Paul W., Evolution of Infectious Disease, Oxford University Press, New York, 1994., ISBN # 0 195 06058 X.

Fields, Bernard M., Knipe, David M. and Peter M. Howley (eds.), Fundamental Virology, 3rd ed. Lippincott-Raven, Philadelphia, 1996, ISBN # 0 7817 0284 4.

Fischer, Ernest Peter, and Carol Lipson, Thinking about Science: Max Delbruck and the Origins of Molecular Biology, W. W. Norton & Company, New York, 1988, ISBN # 0 393 0250X.

Flint, S. Jane, Enquist, Lynn, W. ,Krug, Robert M., Racaniello, Vincent and Anne-Marie Skalka, Principles of Virology: Molecular Biology, Pathogenesis and Conrol, ASM Press, Washington, DC, 2000, ISBN # 1 555 81127 2.

Greenwood, Brian, and Kevin De Cock, editors, New & Resurgent Infections: Prediction, Detection and Management of Tomorrow's Epidemics, John Wiley & Sons, Chichester, 1998, ISBN # 0 471 98174 5.

Hays, J.N., The Burdens of Disease: Epidemics and Human Response in Western History, Rutgers University Press, 1998, ISBN # 0 813 52527 6.

Henig, Robin Marantz, A Dancing Matrix: How Science Confronts Emerging Viruses, Vintage Books, 1994, ISBN # 0 679 73083 4.

Hoehling, A. A., The Great Epidemic, Little, Brown & Co., Boston, 1961, ISBN #

Judson, Horace Freeland, The Eighth Day of Creation: The Makers of the Revolution in Biology, Touchstone / Simon and Schuster, 1979, ISBN # 0 879 69477 7.

Karlen, Arno, Man and Microbes: Disease and Plagues in History and Modern Times, Jeremy P. Tarcher-Putnam / G. P. Putnam's Sons, New York, 1995, ISBN # 0 874 77759 3.

Kolata, Gina, Clone: The Road to Dolly and the Path Ahead, William Morrow and Company, Inc., New York, 1998, ISBN # 0 688 15692 4.

Lechevalier, Hubert A., and Morris Solotorovsky, Three Centuries of Microbiology, McGraw-Hill Book Company, New York 1965, ISBN # 0 486 23035 X.

Mangold, Tom, et al, Plague Wars: A True Story of Biological Warfare, St. Martin's Press (Trade) 2000, ISBN # 0 312 20353 5.

Margulis, Lynn, and Dorion Sagan, Origins of Sex: Three Billion Years of Genetic Recombination, Yale University Press, New Haven, 1986, ISBN # 0 300 04619 7.

McKane, Larry and Judy Kandel, Microbiology: Essentials and Applications, McGraw-Hill, New York, 1995, ISBN # 0 070 45154 0.

Moore, John A., Science As a Way of Knowing: The Foundations of Modern Biology, Harvard University Press, Cambridge, Massachusetts, 1993, ISBN # 0 674 79481 8.

Morse, Stephen S., editor, Emerging Viruses, Oxford University Press, New York, 1993, ISBN # 0 195 07444 0.

Oldstone, Michael B. A., Viruses, Plagues, & History, Oxford University Press, New York, 1998, ISBN # 0 195 11723 9.

Peters, C. J., M.D., and Mark Olshaker, Virus Hunter: Thirty Years of Battling Hot Viruses Around the World, Anchor Books / Doubleday, New York, 1997, ISBN # 0 385 48557 3.

Radetsky, Peter, The Invisible Invaders: The Story of the Emerging Age of Viruses. Little, Brown and Co. 1992, ISBN # 0 316 73216 8.

Regis, Edward, The Biology of Doom: The History of America's Secret Germ Warfare Project, Henry Holt & Company, Inc. 1999, ISBN # 0 805 05764 1.

Regis, Edward, Virus Ground Zero: Stalking the Killer Viruses With the Center for Disease Control, Pocket Books, 1998, ISBN # 0 671 02325 X.

Rhodes, Richard, Deadly Feasts: Tracking the Secrets of a Terrifying New Plague, Simon & Schuster, New York, 1997, ISBN # 0 684 82360 8.

Rosenberg, Charles E., The Cholera Years: The United States in 1832, 1849, and 1866, The University of Chicago Press, Chicago, 1962, ISBN # 0 226 72678 9.

Ryan, Frank, Virus X: Tracking the New Killer Plagues Out of the Present and Into the Future, Little, Brown and Company, Boston, 1997, ISBN # 0 316 76383 7.

Sapp, Jan, Evolution by Association: A History of Symbiosis, Oxford University Press, New York, 1994, ISBN # 0 195 08821 2.

Shilts, Randy, And the Band Played on: Politics, People, and the AIDS Epidemic, St. Martin's Press, 2000, ISBN # 0 312 24135 6.

Tortora, Gerard J., Funke, Berdell R. and Christine L. Case, Microbiology, An Introduction, 6th. ed., Benjamin Cummings, Redwood City, ISBN # 0 805 32155 1.

Walker, Peter M. B., editor, The Wordsworth Dictionary of Biology, Wordsworth Reference / W & R Chambers Ltd., Edinburgh, 1989, ISBN # 1 853 26352 4.

Watts, Sheldon, Epidemics and History: Disease, Power and Imperialism, Yale University Press, 1999, ISBN # 1 300 08087 5.

Wills, Christopher, Yellow Fever, Black Goddess: The Coevolution of People and Plagues, Perseus Press, 1997, ISBN # 0 201 32818 6.

Ziegler, Philip, The Black Death, Alan Sutton Publishing Limited, Phoenix Mill, United Kingdom, 1991, ISBN # 0 862 99838 7.

Zinsser, Hans, Rats, Lice and History: A Chronicle of Pestilence and Plagues, Black Dog & Leventhal Publishers, New York, 1963, ISBN # 0 333 39567 0.

2. Course Analysis Questionnaire

Section A: Details of the Course

A1. The course is designed to be a 3-credit non-laboratory science course that students may elect in order to fulfill part of their liberal studies requirements for the 4-3-3 science option. It is intended for students who are non-biology majors or minors.

A2. This course does not require a change in any existing course or program.

A3. The format of the course combines traditional lectures with classroom discussions.

A4. The course has been taught three times as a BI 281 Special Topics offering. It is not a dual-level course.

A5. The course will not be offered for variable credit.

A6. Several institutions offer similar courses, including those in the following list.

Regular Courses:

(1) MPF 111 Microorganisms and Human Disease, Miami University of Ohio,
(2) Bio 150W, Emerging Diseases, College of William and Mary,
(3) BI 199, Plagues, University of Oregon,
(http://biology.www.uoregon.edu/biology_www/online_classes/bi199w97y/home..html)
(4) BI 201, Biological Issues:Emerging Diseases, Beloit College,
(http://www.biology.beloit/edu/emgdis.html)
(5) BI 345, Emerging Infectious Diseases, SUNY Fredonia,
(http://www.fredonia.edu/bio345)

Distance Learning Courses:

(6) NCLC 441, AIDS, Plagues, Health and Society, BIONEXUS Foundation,
(http://www.bionexusfoundation.org.nclc441.html)
(7) "Bugs on the Web", University of Western Ontario.
(http://www.mni.uwo.ca/BUGS/index.html)

A7. No accredited agency recommends or requires the skills or content of the proposed course.

Section B: Interdisciplinary Implications

B1. The course will be offered by a single instructor.

B2. IUP currently has two courses dealing with HIV and AIDS (BI 115 "Understanding HIV Biology" and LS 499 "AIDS and Society"). Because HIV and AIDS represent only a small part of its content, the proposed Emerging Diseases course does not significantly overlap these existing courses.

B3. Seats in the course will be made available for students in the School of Continuing Education.

Section C: Implementation

C1. Three complement hours per offering will be required. Faculty resources are currently adequate.

C2. a. Space: One-average-size classroom per offering, to be used three times a week. Current resources are adequate.
b. Equipment: Standard audio-visual equipment such as an overhead projector and screen, VCR. Current resources are adequate.
c. Laboratory Supplies: None required.
d. Library Materials: Current holdings are adequate for an introductory, non-majors course. Students will also be expected to use inter-library loan, faculty collections and internet resources.
e. Travel Funds: No travel funds are necessary.

C3. Not applicable. The course is not being funded by a grant.

C4. It is expected that the course will be offer on a biennial basis, depending on demand.

C5. It is anticipated that a single section of the course will be offered during any semester

C6. Course enrollment will be limited by the number of seats available in a standard, general-purpose classroom.

C7. No professional society recommends enrollment limits for a course of this nature.

C8. The course is designed for non-biology majors and as such will not affect the curriculum requirements for the majors in the Department of Biology.

Section D: Miscellaneous

The proposed course, essentially as described in this proposal, has been taught three times since 1997 as a BI 281 Special Topics module. A total of 18 students in the two largest classes (1998 and 2000) were surveyed to assess their reaction to the course and to its method of delivery. Using a Likert-type evaluation instrument generated by Dr. Luciano, students were asked to rate several aspects of the course using a 1-10 scale with 10 as the highest possible rating. Survey data are summarized in the following table.

Student Responses to 1998 and 2000 Surveys

Question	Average Response	Range
1) How well has the course helped you to better understand relevant articles in the popular press?	8.5	5-10
2) How well has the course prepared you to make more informed personal decisions regarding infectious diseases?	8.9	5-10
3) How well has the course helped you to better appreciate the relationship between science and society?	8.6	6-10
4) How well has the course helped you to appreciate the impact of personalities upon science?	7.8	5-10
5) How helpful or useful were the videos for the course?	9.0	6-10
6) How helpful were the lectures presented in the course?	9.5	6-10

Students were also asked to write "open-ended" comments as a part of their answers to these questions and were also asked to comment on other aspects of the course. Some of their responses are reproduced below.

In response to Question #1, a Spring, 2000 student offered, "When first coming to this course, I had no idea the extent to which you had to look at sources. I was just used to taking their word for what was happening and going on." Another student from the same section wrote, "Not only am I more aware of the resources of information available to me, but I am better able to interpret what I read and how I can tell others. Our round tables on Fridays were very beneficial. I learned a lot that I wouldn't find in a typical textbook. I think this is a great aspect of the course and one of the reasons I would recommend it." A 1998 student commented, "I thought the discussion of current issues was also helpful. Very few classes deal with current issues."

In response to Question #2, a student in the Spring, 2000 section commented, "This class made me much more aware of the diseases that are out in the world! Although we truly didn't actually study one certain disease inside and out, I am now able to correlate info with one disease to the info on another, and make coherent decisions that relate the two together. I honestly think this class helped me to put info together and be able to apply it to other questions and situations to be able to make biologically good informed decisions about disease."

In response to Question #3 about science and society, a Spring, 1998 student wrote "I never really made the connection before, but many examples were presented that stressed this fact (American Bicentennial, idealism, reason for lack of AIDS research vs. Legionnaire's Disease)."

As a way of assessing their "overall" reaction to the course, students in the Spring 1998 section were asked "Do you think this course should be offered again?" All nine responded "yes" and added the following amplifications, among others.

"I definitely think it should be offered again because it lets students establish clear relations between the biological and social part of different infectious disease, which contributes to complement strongly the education – especially for those involved in health careers."

"This course was great for showing the impact of diseases and science on society in a big way. Much of the information that we as biology students learn is so detailed down to the smallest part of a subject that how the science actually affects people is not realized."

"I work with infected people every day and always prided myself for learning more. This class showed me I have only touched the tip of the iceberg when it comes to understanding the health risk at large."

Although the sample population is not large (n = 18), student responses indicate a high level of satisfaction with the course and its format as proposed. A copy of the complete set (30+ pages) of student responses will be made available upon request.

Part III. Letters of Support

Letters of support from the following individuals are attached:

(1) Dr. N. Bharathan, Department of Biology

(2) Ms. Judith Michaels, Department of Sociology

Indiana University of Pennsylvania

Department of Sociology
McElhaney Hall, Room 102
441 North Walk
Indiana, Pennsylvania 15705-1087

724-357-2730
Fax: 724-357-4842
Internet: *http://www.iup.edu*

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MEMO

To: Dr. C. S. Luciano

From: Judith Michaels

Subject: Emerging Diseases Course Proposal

Date: September 14, 2000

Upon review of the course proposal for Emerging Diseases, I have concluded that there is no significant overlap in the content or approach between this course and the LS 499: HIV, AIDS and Society course. While HIV/AIDS is covered in the Emerging Diseases course, it is only one of the many diseases that are studied. In the LS 499 course, HIV/AIDS is the sole focus of the course, other than a brief (one hour) presentation and discussion on current epidemics during the early weeks of the course.

Furthermore, while the Emerging Diseases course meets the requirements for a Liberal Studies elective, its primary approach originates within the discipline of biology. The LS 499 course on HIV/AIDS uses a synthesis, interdisciplinary approach integrating topics and issues from public health, biology, sociology, ethics, history, political science and so forth.

It is my belief that these courses will actually complement each other. I offer my full support to this course being offered as part of the broad Liberal Studies course selection.

Indiana University of Pennsylvania

Department of Biology
Weyandt Hall, Room 114
975 Oakland Avenue
Indiana, Pennsylvania 15705-1090

724-357-2352
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September 20, 2000

Dr. Carl Luciano
Biology Department

RE: Liberal Studies Course: BI????? Emerging Diseases

Dear Dr. Luciano:

I have reviewed the course proposal for BI _____ titled Emerging Diseases. The course provides comprehensive account of the potential effects emerging diseases on modern society. Further the proposed course focuses on the biological basis of several newly emerging infectious diseases caused by bacteria, viruses, prions, fungi, and other water-borne parasites. The HIV Biology and AIDS course (BIOL 117) that is currently with the University Senate for final approval, specifically deals with HIV. Therefore I do not see any significant overlap with the BIOL 117 "Biology of HIV and AIDS" course. Additionally, the "Emerging Diseases" course is very "topical" and will provide experience that can enhance student appreciation for the relevance to the modern society.

Sincerely,

N. Bharathan
Assistant Professor
Biology Department

Liberal Studies Office
110 Gordon Hall ext. 7-5715

Mary Sadler
email: msadler

Date: December 7, 2000

To: Dr. Carl Luciano
Biology Department

From: Mary Sadler, Director Liberal Studies

Subject: BIOL 119 Emerging Diseases

At the November 30, 2000 meeting, the Liberal Studies Committee approved BIOL 119 Emerging Diseases, for the non-laboratory science category in the Liberal Studies Program. As I mentioned in my email, we ask that in the topical outline section you change "class meetings" to " weeks" for the syllabus of record.

The speed of our deliberations was a direct result of you submitting a strong proposal that was well conceptualized and carefully prepared. We appreciate your effort.

Our approval will be forwarded to the UWUCC where the proposal is in the process of review as a new course.

CC: Dr. Barkley Butler, Chair
Dr. John Eck, Dean
UWUCC