

LSC Use Only Proposal No: _____ UWUCC Use Only Proposal No: 11-132c
 LSC Action-Date: App-3/22/12 UWUCC Action-Date: App-4/10/12 Senate Action Date: App-5/10/12

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person(s) Robert Hinrichsen	Email Address bhinrich@iup.edu
Proposing Department/Unit Biology	Phone 724-357-2352

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

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

Current course prefix, number and full title: _____

Proposed course prefix, number and full title, if changing: **BIOL 106 Human Genetics and Health**

2. Liberal Studies Course Designations, as appropriate

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

Learning Skills 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)	<i>[Signature]</i>	<u>1/20/12</u>
Department Chairperson(s)	<i>[Signature]</i>	<u>1/30/12</u>
College Curriculum Committee Chair	<i>[Signature]</i>	<u>3/12/12</u>
College Dean	<i>[Signature]</i>	<u>3/12/12</u>
Director of Liberal Studies (as needed)	<i>[Signature]</i>	<u>3/22/12</u>
Director of Honors College (as needed)		
Provost (as needed)		
Additional signature (with title) as appropriate		
UWUCC Co-Chairs	<i>[Signature]</i>	<u>4/10/12</u>

Received

MAR 19 2012

Part II. Description of Curriculum Change

New Syllabus of Record

I. Catalog Description

BIOL 106 Human Genetics and Health

3c-2l-4cr

Prerequisites: Non-Biology department majors and minors only

This course offers a broad overview of the role that genetics and molecular biology play in the everyday life of humans. It will be organized around a central question- how does genetics affect our health? The course will introduce the student to human inherited diseases, genetic therapies utilized to correct genetic disorders and the role of genetics in the new field of individualized medicine. The student will be introduced to the fields of stem cells and their therapeutic uses, the genetics of cancer, the microbial pathology of humans and the utilization of vaccines in the treatment and prevention of human diseases. Using this background, the student will be presented with the most recent events in the field of human genetic diseases and how they will affect the student in the future. (Does not count toward Biology electives, Controlled electives, or Ancillary Sciences for Biology department majors and minors.)

II. Course Outcomes

Objective 1:

Describe basic human genetics concepts and analyze how they play a role in disease states.

Expected Student Learning Outcomes 1 and 2:

Informed and Empowered Learners

Rationale:

Assignments will require students to comprehend how traits are passed on to future generations and analyze how changes in the genetic material can result in disease states. Assignments will also require students to evaluate how genetic material can change, how genetic mutations can result in a disease, how these changes can be passed down to future generations, and the methods to diagnose and treat these diseases.

Objective 2:

Identify and evaluate problems and issues related to human biology and genetics as an informed citizen.

Expected Student Learning Outcomes 3:

Responsible Learners

Rationale:

Assignments will require students to evaluate the ethical and social impact of genetic therapy and how this might impact topics including genetically modified organisms, the use of embryonic stem cells and the use of individual genetic information. Assignments will also require students to examine their worldview in regards to the incidence of genetic disease and their remedies. Topics may include vaccines, prion diseases and microbial infection.

Objective 3:

Describe the scientific method and devise experiments to test this method in a laboratory setting.

Expected Student Learning Outcome 2:

Empowered Learners

Rationale:

Assignments will require students to comprehend the scientific method and apply this concept to laboratory exercises.

III. Course Outline

A. Lecture

1. The Genetic Basis of Human Disease (9 hours)
 - Introduction to human genetics and disease
 - Epigenetics- the environment and disease
 - Human genetic diseases
 - The human genome project and its effect on medicine
 - Genetic therapies
 - Individualized medicine
- Exam # 1 (1 hour)
2. The Use of Stem Cells in Modern Medicine (9 hours)
 - Human development
 - Embryonic and adult stem cells
 - Ethical considerations of the stem cell usage
 - Current government policies on stem cell usage

- Medical uses of stem cell treatment
Exam # 2 (1 hour)
- 3. The Genetics of Cancer (6 hours)
 - The biology of cancer
 - The genetic nature of cancer
 - The recent advances in cancer therapies
 - Exam # 3 (1 hour)
- 4. Microbial Pathology and Vaccines (9 hours)
 - The genetic nature of infectious agents
 - The pathology of microbial infection
 - Modern genetic methods to detect infectious disease
 - Vaccines as treatment for microbial infection
 - Possible negative effects of vaccines
 - Exam # 4 (1 hour)
- 5. Genetically Modified Organisms (5 hours)
 - Techniques to genetically modify an organism
 - The benefits of using GMO's
 - The possible negative impact of GMO's
 - Exam # 5 during the final exam period (2 hour)

B. Laboratory

Week Topic of Laboratory

1 Introduction to the scientific method and its importance

Part I- Stem Cells and Regeneration

2-3 The use of Planaria to illustrate the power of cancer treatments using regeneration as a model

4 Ethical issues in stem cell research- class discussion of current ethical dilemmas that were brought up in lecture

Part II- Cancer

5 Cells and cancer- a laboratory exercise that will focus on a microscopic examination of cancer tissues as compared to normal tissues

6 Case study- breast cancer. How a woman is tested for breast cancer, how a diagnosis is made and the possible treatments that are available

to the patient. This exercise will be used to familiarize students with the procedures that are performed in genetic testing and disease.

Part III- DNA Fingerprinting in Forensics and Medicine

- 7-8 Using molecular genetics to resolve a crime- the students will perform a DNA fingerprint of their own DNA to determine individual identity
- 9 Ethical issues in DNA fingerprinting- class discussion of current ethical dilemmas of the technique done in the previous lab

Part IV- Human Disease and Pandemics

- 10 The Spanish Flu Outbreak of 1918 and the H5N1 Avian Flu Outbreak- computer simulations will be used by the students to illustrate pandemics and epidemics.
- 11 Do disinfectants eliminate bacterial contamination? A laboratory exercise to demonstrate to students the difficulty in preventing bacterial spread during a pandemic

Part V- Genetically Modified Foods

- 12-13 Molecular biological determination of genetically modified foods
- 14 Group Presentations

IV. Evaluation Methods

The grades from the lecture and the laboratory will be combined for the final grade. In the lecture portion of the course the students in this class will be evaluated by written exams that cover the material from the textbook and lecture. The laboratory portion of the course will include both weekly quizzes, two short papers and a student presentation.

1. Types of Evaluations

- a. Lecture (75% of the total grade)
 - There will be five written examinations (15% of total grade for each exam) during the semester. The final examination, during the finals week, will not be comprehensive. Each examination will be weighed equally. The examinations will include multiple choice questions and a short essay question.
- b. Laboratory (25% of the total grade)
 - The exact format of the laboratory evaluations will be decided by the individual laboratory instructor. One such rubric is given below.
 - a. Weekly quizzes (10% of the total grade)

to the patient. This exercise will be used to familiarize students with the procedures that are performed in genetic testing and disease.

Part III - DNA Fingerprinting in Forensics and Medicine

Using molecular genetics to resolve a crime - the students will perform a DNA fingerprint of their own DNA to determine individual identity. Ethical issues in DNA fingerprinting - class discussion of current ethical dilemmas of the technique done in the previous lab.

Part IV - Human Disease and Pandemics

The Spanish Flu Outbreak of 1918 and the H1N1 Avian Flu Outbreak - computer simulations will be used by the students to illustrate pandemics and epidemics. Do disinfectants eliminate bacterial contamination? A laboratory exercise to demonstrate to students the difficulty in preventing bacterial spread during a pandemic.

Part V - Genetically Modified Foods

Molecular biological determination of genetically modified foods. Group Presentations.

VI. Evaluation Methods

The grades from the lecture and the laboratory will be combined for the final grade. In the lecture portion of the course the students in this class will be evaluated by written exams that cover the material from the textbook and lecture. The laboratory portion of the course will include both weekly quizzes, two short papers and a student presentation.

1. Types of Examinations

- a. Lecture (25% of the total grade) There will be five written examinations (17% of total grade for each exam) during the semester. The final examination, during the finals week, will not be comprehensive. Each examination will be weighted equally. The examinations will include multiple choice questions and a short essay question.
- b. Laboratory (25% of the total grade) The exact format of the laboratory evaluations will be decided by the individual laboratory instructor. One such method is given below.
- a. Weekly quizzes (10% of the total grade)

These quizzes will cover material that was presented in the previous lab. a prior laboratory exercise and discuss the significance of the material.

- b. Paper (10% of the total grade)
This paper will concern a book that the students are required to read as part of the liberal studies component of the course. The paper will concern a set of questions that the students must answer, which will determine their understanding of the reading material and its significance to the overall topic of the course.
- c. Group presentation (5% of the total grade)
A group presentation at the end of the semester in which each group will be given a topic related to the course that will be discussed.

2. Grade Breakdown

1. Lecture exams	75%
2. Laboratory	25%
a. Paper	10%
b. Quizzes	10%
c. Presentation	5%

V. Grading Scale

Grading scale: A ($\geq 90\%$), B (80-89%), C (70-79%), D (60-69%), F (< 60)

VI. Attendance Policy

The attendance policy will be in accordance with University guidelines as outlined in the undergraduate catalog.

VII. Required Textbooks and Supplemental Readings

A. Required Textbooks:

- Lewis, R. (2012) *Human Genetics* 10th edition. McGraw-Hill Higher Education.
- Laboratory Manual- from Pro Packet.

B. Required Non-Textbook Readings:

- Wexler, A. (2006) *Mapping Fate: A memoir of Family, Risk and Genetic Research*. University of California Press.
- Gillham, N.W. (2011) *Genes, Chromosomes and Disease*. FT Press Science.

C. Supplemental Texts

- Caplan, A.-*Due Consideration: Controversy in the Age of Medical Miracles*. 1998. Wiley Press.
- Davies, Kevin - *Cracking the Genome: Inside the Race to Unlock Human DNA* 2001. Free Press.
- Drlica, K. - *Understanding DNA and Gene Cloning: A Guide for the Curious*. 1997. Wiley Press.
- Holland, S. LeBaxqz, K. and Zoloth, L., eds.- *The Human Embryonic Stem Cell Debate*. 2001. MIT Press.
- McGee, G. - *Beyond Genetics: The User's Guide to DNA*. 2003. Perennial Currents.
- Pence, Gregory- *Who's Afraid of Human Cloning?* 1998. Rowman & Littlefield Publishers, Maryland, USA.
- Reilly, Philip - *Abraham Lincoln's DNA and Other Adventures in Genetics* 2000. Cold Spring Harbor Laboratory Press.
- Ridley, M.- *Genome: The Autobiography of a Species in 23 Chapters*. 1999. Perennial Currents.
- Schmidtke, J. and Krawczajk, Micheal eds. *DNA Fingerprinting 2nd*. 1999. Springer Verlag.
- Shanks, P. - *Human Genetic Engineering: A Guide for Activists, Skeptics and the Very Perplexed*. 2005. Nation Books.
- Steinburg, Deborah Lynn - *Bodies in Glass: Genetics, Eugenics, Embryo Ethics*. 1997. Manchester University Press.
- Wade, Nicholas - *Life Script*. 2001. Simon and Schuster.
- Walker, Mark and McKay, David- *Unraveling Genes: A Layman's Guide to Genetic Engineering* 2000. Allen and Unwin Press, St. Leonards, Australia

D. Useful Websites

- Mendelian Inheritance in Man www.ncbi.nih.gov/omim/searchomim
- National Society of Genetic Counselors www.nsgc.org
- Mendel Web- www.ftp.netSPACE.org/MendelWeb/Mendel.htm
- Cystic Fibrosis Foundation- www.cff.org
- National Breast Cancer Coalition- www.natlbcc.org
- Celera Genomic Corp.- www.celera.com
- Education and Genetics: Human Genome Project Information- www.ornl.gov/hgmis/education/education.shtml

VIII. Special Resource Requirements

None

VIII. Special Resource Mechanisms

- www.ornl.gov/units/education/education.shtml
- Education and Genetics: Human Genome Project Information- www.colera.com
- [National Breast Cancer Coalition- www.nationalbreastcancercoalition.org](http://www.nationalbreastcancercoalition.org)
- [Cystic Fibrosis Foundation- www.cff.org](http://www.cysticfibrosis.org)
- [Mendel Web- www.fda.gov/oc/ohrt/ohrtweb/MendelWeb/MendelWeb.html](http://www.fda.gov/oc/ohrt/ohrtweb/MendelWeb/MendelWeb.html)
- [National Society of Genetic Counselors www.nsgo.org](http://www.nsgo.org)
- [Mendelian Inheritance in Man www.ncbi.nlm.nih.gov/omim/mendelianinheritance](http://www.ncbi.nlm.nih.gov/omim/mendelianinheritance)

B. Useful Websites

- [Genetics Engineering 2000. Allen and Unwin Press. St. Leonards, Australia](http://www.genetics.edu.au)
- [Walker, Mark and Black, David- Unraveling Genes: A Layman's Guide to Life's Script 2000. Simon and Schuster](http://www.walkerandblack.com)
- [Ethical 1997. Manchester University Press](http://www.abdn.ac.uk/med/medschool/medschool/medschool.htm)
- [Steinberg, Deborah Lynn - Bodies in Glass: Genetics, Eugenics, Birthright and the Very Persuaded 2002. Nation Books](http://www.nationbooks.com)
- [Shankar, P. - Human Genetic Engineering: A Guide for Activists, Scientists and the Very Persuaded 2002. Nation Books](http://www.springer-vinger.com)
- [Schmidke, J. and Kravetski, Michael eds. DNA Fingerprinting and 1999. Perennial Currents](http://www.coldspringlaboratorypress.com)
- [Ridley, M. - Genome: The Autobiography of a Species in 24 Chapters 1999. Perennial Currents](http://www.coldspringlaboratorypress.com)
- [Kelly, Philip - Abraham Lincoln's DNA and Other Adventures in Genetics 2000. Cold Spring Harbor Laboratory Press](http://www.littlefieldpublishers.com)
- [Fence, Gregory- Who's Afraid of Human Cloning? 1998. Rowman & Littlefield Publishers, Maryland, USA](http://www.perennial.com)
- [Falconer, G. - Beyond Genes: The User's Guide to DNA, 2000. Perennial Currents](http://www.perennial.com)
- [Call, Robert 2000. MIT Press](http://www.mitpress.com)
- [Richard, S. Lasky, E. and Kolch, L., eds.- The Human Embryonic Stem Cell Debate 2000. MIT Press](http://www.wiley.com)
- [Cannon, 1997. Wiley Press](http://www.wiley.com)
- [Dhali, K. - Understanding DNA and Gene Cloning: A Guide for the Curious 1997. Wiley Press](http://www.wiley.com)
- [DNA 2000. Free Press](http://www.wiley.com)
- [Davies, Kevin - Cracking the Genome: Inside the Race to Unlock Human DNA 2000. Free Press](http://www.wiley.com)
- [Cajal, A. - The Constellation: Cannery in the Age of Medical Advances. Supplemental Texts](http://www.wiley.com)

IX. Bibliography

- Cummings, S. ed. - *Current Perspectives in Genetics*. 2000. Brooks/Cole Press.
- Cummings, M. – *Human Heredity: Principles and Issues*. 2006. Thomson Press.
- Fairbanks, D. and Anderson, W.R. - *Genetics: The Continuity of Life*. 2008. Thomson Press.
- Klug, W., Cummings, M., Spencer, C. and Palladino, M. – *Essentials of Genetics 7th Ed.* 2010. Benjamin Cummings Press.
- Korf, B. - *Human Genetics: A Problem-Based Approach 2nd Ed.* 2000. Blackwell Science Press.
- Mange, E. and A. Mange – *Basic Human Genetics*. 1990. Sinauer Press.
- McConkey, E. – *How the Human Genome Works*. 2004. Jones and Bartlett Press.
- Pierce, B. - *Genetic Essentials: Concepts and Connections*. 2010. Freeman Press.
- Woodward, V. – *Human Heredity and Society*. 1992. West Press.
- Yashon, R. and M. Cummings- *Human Genetics and Society*. 2009. Brooks/Cole Press.

Course Analysis Questionnaire

Section A: Details of the Course

- A1 How does this course fit into the programs of the department? For what students is the course designed? (majors, students in other majors, liberal studies). Explain why this content cannot be incorporated into an existing course.

This course is intended to satisfy the Liberal Studies Natural Science Lab Science requirement or the Liberal Studies Elective scientific literacy requirement. It will be one of three courses offered by the Department of Biology; BIOL 103, 104 and 106 as laboratory-based courses. BIOL 106 will give the student an up-to-date introduction of a particular field of biology that is intended to be relevant to their everyday lives. This will include several topics previously taught in BIOL 103, but were removed from the revised BIOL 103 so it could focus on ecology and evolution.

- A2 Does this course require changes in the content of existing courses or requirements for a program? If catalog descriptions of other courses or department programs must be changed as a result of the adoption of this course, please submit as separate proposals all other changes in courses and/or program requirements.

This will not change the content of any other existing course in the Department of Biology.

- A3 Has this course ever been offered at IUP on a trial basis (e.g. as a special topic) If so, explain the details of the offering (semester/year and number of students).

This is a newly designed course that is being created to fulfill the new requirements of the Liberal Studies component at IUP.

- A4 Is this course to be a dual-level course? If so, please note that the graduate approval occurs after the undergraduate.

No.

- A5 If this course may be taken for variable credit, what criteria will be used to relate the credits to the learning experience of each student? Who will make this determination and by what procedures?

N/A

- A6 Do other higher education institutions currently offer this course? If so, please list examples (institution, course title).

- University of Maryland- Baltimore County. BIOL 123 Human Genetics.
- Pomona College. BIOL 2A- Human Genetics.
- Framington State University- BIOL 114 Human Perspectives on Genetics.

A7 Is the content, or are the skills, of the proposed course recommended or required by a professional society, accrediting authority, law or other external agency? If so, please provide documentation.

No.

Section B: Interdisciplinary Implications

B1 Will this course be taught by instructors from more than one department or team taught within the department? If so, explain the teaching plan, its rationale, and how the team will adhere to the syllabus of record.

This course will be team taught within the Biology Department. One of the lecture professors will act as the coordinator of all laboratory sections and lab faculty. The lecture may be team taught with faculty whose expertise is appropriate for each segment of the lecture schedule. The lab sections will be taught by a number of faculty members in the Department of Biology. All faculty who teach the lab sections of this course will be thoroughly briefed on the concepts and goals of the labs, as established in the course syllabus.

B2 What is the relationship between the content of this course and the content of courses offered by other departments? Summarize your discussions (with other departments) concerning the proposed changes and indicate how any conflicts have been resolved. Please attach relevant memoranda from these departments that clarify their attitudes toward the proposed change(s).

There are no conflicts with other departments at IUP.

B3 Will this course be cross-listed with other departments? If so, please summarize the department representatives' discussions concerning the course and indicate how consistency will be maintained across departments.

No.

Section C: Implementation

C1 Are faculty resources adequate? If you are not requesting or have not been authorized to hire additional faculty, demonstrate how this course will fit into the schedule(s) of current faculty. What will be taught less frequently or in fewer sections to make this possible? Please specify how preparation and equated workload will be assigned for this course.

The current faculty resources are sufficient. The faculty assigned to the current general biology courses- BIOL 103 and 104- have the expertise to teach this course and will be utilized in part as instructors in this course. This course contains approximately half of the content of the old BIOL 103, and BIOL 103 will be taught less frequently to accommodate this course.

C2 What other resources will be needed to teach this course and how adequate are the current resources? If not adequate, what plans exist for achieving adequacy? Reply in terms of the following:

*Space- the current rooms used for BIOL 103 and BIOL 104 are adequate.

*Equipment- this course will not use any equipment that is not already available in the department.

*Laboratory Supplies and other Consumable Goods- these will be purchased using funds from the department budget that are currently assigned to BIOL 103 and BIOL 104.

*Library Materials- there will be no necessity of using library materials in this course other than existing electronic databases.

*Travel Funds- there will be no travel funds required for this course.

C3 Are any of the resources for this course funded by a grant? If so, what provisions have been made to continue support for this course once the grant has expired? (Attach letters of support from Dean, Provost, etc.)

None.

C4 How frequently do you expect this course to be offered? Is this course particularly designed for or restricted to certain seasonal semesters?

This course may be offered every semester depending on need. Because of the nature of the topics covered in this course, there are no seasonal requirements.

C5 How many sections of this course do you anticipate offering in any single semester?

While it is difficult to determine ahead of time, it is expected to have at least one lecture section and five to six laboratory sections to accommodate the number of students in the course.

C6 How many students do you plan to accommodate in a section of this course? What is the justification for this planned number of students?

In the lecture, we plan to accommodate up to 132 students. However, the laboratory sections will be limited to 24 students per section. This is due to the limited capacity of the laboratory classrooms- they only hold 24 students- and the safety issues that arise in a laboratory with greater than 24 students.

C7 Does any professional society recommend enrollment limits or parameters for a course of this nature? If they do, please quote from the appropriate documents.

No.

C8 If this course is a distance education course, see the Implementation of Distance Education Agreement and the Undergraduate Distance Education Review Form in Appendix D and respond to the questions listed.

It is not a distance education course.

Answers to Liberal Studies Questions

- 1) If there are no volunteers, the department chairperson will appoint one of the professors assigned to teach the course as the course coordinator. The coordinator is responsible for preparing a lab manual, when appropriate (in cooperation with other faculty who teach the course), for supervising work-study students, for ordering supplies for all lab sections, and for maintaining the supplies and equipment stores. The coordinator is in charge of organizing a meeting with all of the instructors prior to the beginning of each semester the course is being offered. This meeting will ensure syllabi and scheduled activities are basically equivalent among faculty assigned to this course. The coordinator will also distribute the laboratory preparation and cleanup equitably among all faculty members teaching the course in any given semester. The coordinator will insure that any faculty members who have not previously taught the course are adequately mentored to provide the best possible experience for the students. This may involve weekly meetings to discuss each lab exercise or other mentoring activities.

- 2) Information about minorities and women is covered during this course. Students will examine the variation in genetic frequencies among different ethnic groups, as well as the possibility of using genetic differences among ethnic groups in terms of disease treatment. Furthermore, the primary text and several of the supplemental readings are written by women including the primary textbook *Human Genetics* by Ricki Lewis and the non-textbook reading *Mapping Fate: A memoir of Family, Risk and Genetic Research* by Alice Wexler.

- 3) Students will be required to read a supplementary book in addition to the required text for the course. This book will provide students with a more personalized look at the discovery of a gene that causes a genetic disease. This reading will give the student an appreciation of the human side of genetic research and the hardships that are involved in such an endeavor.

- 4) This is an introductory course designed for non-biology majors. This course is different from biology major's courses as it will introduce the study of the genetic transmission of human diseases to students from an individual's perspective; the goal is to give the student information that may be relevant to their future health, as opposed to a comprehensive understanding of the field of genetics. Majors will be unable to use this course as credit towards their degree.

Assignment Instructions for a Major Course Assignment

BIOL 106 (Lab): Description of a microbial disease that could cause a pandemic

You were shown the movie *Contagion* in the class, in which the rapid progress of a lethal airborne virus that kills within days is illustrated. Your assignment is to identify a real virus or bacterium that is known to have the ability to cause a pandemic and complete the following questions:

1. What is the microbial agent you have chosen? How does this pathological agent cause disease in humans and why can it be lethal when contracted by humans?
2. In the movie one character was seemingly immune to the disease. Why might some people be immune to the disease you have chosen to describe?
3. How does this agent easily spread from one person to another? What would have to change to make it easier to spread throughout the population?
4. Is there a vaccine for this biological agent? If there is no vaccine, would there be any difficulty in producing one? In the case where a vaccine is available, is there a readily available amount of the vaccine to ward off an epidemic before it turns into a pandemic?
5. What are the difficulties involved in mass producing a vaccine in time to ward off a pandemic?
6. What can be done in advance to reduce the possibility of your selected microbial disease causing a worldwide pandemic?

The paper should be between 4 and 7 pages in length, double spaced and a Times New Roman font of 11 or 12. All sources of information, from books, papers, or the web, must be documented.

Grading Rubric for Description of a microbial disease that could cause a pandemic

Total Assignment worth: 100 points

1. Grammar and spelling: out of 10
2. Introduction
 - Clarity: out of 20
 - Organization: out of 20
3. Discussion
 - Organization: out of 20
 - Implications: out of 20
4. Documentation: out of 10

Part III. Letters of Support or Acknowledgment

BIOL 103 & 104 General Biology I & II are large Liberal Studies courses, populated by many segments of the university. In preparation for the revision of these courses, we determined which majors constitute the majority of student enrollments. Also, we determined which majors required the courses as part of the major and which majors were using them just to fulfill a Natural Science Liberal Studies requirement. Over summer 2011 and fall 2011, the chairperson of the Biology Department contacted the following people and requested input into the revision of BIOL 103-104 General Biology I & II. In most cases, we met with representatives of these entities, in some cases more than once. Based upon the feedback from these meetings, we are revising BIOL 103, BIOL 104, and creating a new course BIOL 106 to replace the current General Biology courses. The nature of the revisions was also communicated to the major constituents prior to these course proposals being developed, and we are seeking their letters of support.

IUP at Punxsutawney (Terry Appolonia)

IUP at Northpointe (Richard Muth)

College of Humanities and Social Sciences (Yaw Asamoah)

College of Education and Educational Technology (Joe Domaracki)

College of Fine Arts

College of Business and Information Technology (Dorothy Gracey)

Department of Hospitality Management (Tom VanDyke)

Department of Safety Sciences (Lon Ferguson)

Department of Psychology (Ray Pavloski)

Department of Health and Physical Education (Elaine Blair)

Department of Criminology (Randy Martin)