GENERAL EDUCATION COURSE PROPOSAL
UNIVERSITY OF MARY WASHINGTON

Use this form to submit **EXISTING** courses for review. If this course will be submitted for review in more than one category, submit a separate proposal for each category.

COURSE NUMBER:	FSEM 100WW		
COURSE TITLE:	BIOLOGICAL TERRORISM – THREAT OR REALITY?		
SUBMITTED BY:	Lynn Lewis	**DATE:**	1/18/07
This course proposal is submitted with the department's approval. (Put a check in the box to the right.) ***If part of a science sequence involving two departments, both departments approve.***			**X**

THIS COURSE IS PROPOSED FOR (check one).

First-Year Seminar ***(indicate in the rationale if this will also count for major credit)***				**X**
Quantitative Reasoning				
Global Inquiry				
Human Experience and Society				
Experiential Learning				
Arts, Literature, and Performance: Process		**or**	**Appreciation**	
Natural Science ***(include both parts of the sequence)***				

NOTE: See the report entitled "General Education Curriculum as Approved by the Faculty Senate," dated November 7, 2007, for details about the general education categories and the criteria that will be used to evaluate courses proposed. The report is available at www.jtmorello.org/gened.

RATIONALE: Using only the space provided in the box below, **briefly** state why this course should be approved as a general education course in the category specified above. *Attach a course syllabus*. **Submit this form and attached syllabus electronically as one document to John Morello (jmorello@umw.edu).** All submissions **must** be in electronic form.

This course is currently being taught as a Speaking Intensive, First-Year Seminar. The course introduces students to the idea that bioterrorism, while a threat, may not be as much of a threat as we fear. Students are introduced to primary and secondary literature (and how to find and identify both) dealing with specific bioterrorism agents. Students then have to apply critical thinking skills to determine whether a particular agent is a realistic threat for bioterrorism purposes (and some agents are while others are not – so everyone will not come to the same conclusion in the class). Students will give one formal presentation, as well as lead and participate in class discussions.

In this course, students are introduced to the literature in the field, their critical thinking skills are enhanced, and their speaking skills (and probably writing skills in future iterations) are developed.

First Year Seminar - Bioterrorism: Threat or Reality?

Dr. Lynn O. Lewis
Jepson 332
540/654-1415
llewis@umw.edu

Office Hours: 9 - 9:50 MWF
12:00 - 1:00 MW
Other hours by appointment

This first year seminar will address the reality of threat from bioterrorism. Ever since the anthrax attacks in 2001, the US has been aware that bioterrorism is a reality, but should we really be afraid of a smallpox attack? Or an attack by some other biological agent? In fact, how successful were the anthrax attacks? This course will attempt to familiarize first year students with the categories of bioterror agents and how they might be delivered to an enemy population. After becoming familiar with the bioterror agents, students will analyze how much of a threat individual agents really are and what, if anything, can be done to counter such a threat.

Each student will choose a specific bioterror agent (there is a list attached to this syllabus) as their topic for the entire semester. The choice must be made by the end of the third week of the semester, (February 1) and must be written on the instructor's door (to be sure only one student chooses each agent).

The course is Speaking Intensive, as students are expected to give two presentations dealing with their specific bioterror agent. The first will be a formal talk and will be fairly short (10-15 minutes) and will deal with the agent itself, the disease(s) caused by the agent, and any current treatments or preventive measures. A bibliography page, citing the sources used by the student, will be turned in on the day of the presentation. Students are expected to use a minimum of five (5) sources, which may be books, magazines, journal articles or web sites. Further, each student will write and turn in three (3) multiple choice questions (4-5 answers each) dealing with their specific bioterror agent. These questions are due - by e-mail - on the day of the presentation. Students are also expected to put together a one-page handout (a "study guide") highlighting the most important points of their bioterror agent presentation. This handout may be distributed in class, or the instructor can make it available (prior to class) on the BlackBoard website.

The second presentation will be a student-led class discussion of a primary journal article dealing with the specific bioterror agent. The student will be expected to find a current journal article (NOT a newspaper article) on their bioterror agent, distribute it to the class at least one class period prior to the discussion, and lead a class discussion about the agent. This discussion should include an analysis of the threat level of this particular bioterror agent. The student will write two (2) multiple choice questions (4-5 answers each) dealing with the primary journal article. These questions are due - by e-mail - the day after the class discussion. Another study guide detailing the most important points of the article and discussion is due two (2) days after the discussion. This study guide will be distributed electronically on BlackBoard.

Students will be encouraged to use the Speaking Center, although it will not be required. Students will be specifically instructed in how to give a scientific speech, and will be introduced to the grading instruments that will be used for their two presentations. Further, the instructor will model journal article discussions, as the first part of the semester will be spent analyzing

articles chosen by the instructor. (These articles will be available through the Blackboard web site.)

Beyond their own presentations, students will be expected to arrive for class having already read the assigned article. Further, students will be expected to ask questions and participate in discussions about each of the articles assigned in class, whether by the instructor or a fellow student. A portion of the course grade will depend on participation.

A portion of the midterm and final exams will consist of questions that have been designed by the students about their own bioterror agent. Students will write five multiple choice questions, three (3) on the bioterror agent short talk, and two (2) on the journal article discussion. Each student will be graded on the quality of their questions and answers.

Grading:

Short presentation	15%
Journal article discussion	25%
Participation	15%
Handouts, MC questions	5%
Midterm exam	20%
Final exam	20%

The following is a list of topics from which students may want to choose bioterror agents. This is not an exhaustive list, so if you wish to choose a topic not on the list, just discuss it with the instructor. You will need to identify your topic by February 1. There will be a sign-up sheet on the instructor's door so you can choose your topic whenever you like.

Viruses:

Chikungunya virus
Congo-Crimean hemorrhagic fever virus
Dengue fever virus
Eastern, Western or Venezuelan equine encephalitis virus
Ebola virus, Marburg virus
Hantaan virus
Japanese encephalitis virus
Junin virus
Lassa fever virus
Lymphocytic choriomeningitis virus
Machupo virus
Monkey pox virus
Nipah virus
Rift Valley fever virus
Tick-borne encephalitis virus
Variola virus (smallpox)
White pox
Yellow fever virus

Bacteria:

Coxiella burnetii
Bartonella (Rochalinea) quintana
Rickettsia prowazeki or *Rickettsia rickettsii*
Bacillus anthracis
Brucella abortus, Brucella melitensis, or
Brucella suis
Burkholderia (Pseudomonas) mallei or
Burkholderia (Pseudomonas) pseudomallei
Chlamydia psittaci
Clostridium botulinum
Francisella tularensis
Salmonella typhi
Shigella dysenteriae
Vibrio cholerae
Yersinia pestis

Toxins:

Botulinum toxins
Clostridium perfringens toxins
Conotoxin
Ricin
Saxitoxin
Shiga toxin
Staphylococcus aureus toxins
Tetrodotoxin
Verotoxin
Microcystin (Cyanginosin)
Aflatoxins

Tentative Schedule

1/14 Introduction - What is Bioterrorism?
1/16 Background information on Viruses
1/18 Background information on Bacteria

1/21 Background information on Toxins
1/23 Background information on Delivery systems for Bioweapons
1/25 **NO CLASS**

1/28 How to do library/internet research
1/30 Speaking Intensive requirements (how to give a speech)

2/1 Speaking Center representative
*Choose bioterrorism agent by the end of this week

2/4 Paper #1 - Class discussion led by instructor.
2/6 Paper #2 - Class discussion led by instructor and model formal talk.
2/8 Paper #3 - Class discussion led by instructor.

2/11 Begin formal presentations (2 students/day)
2/13 Formal presentations
2/15 Formal presentations

2/18 Formal presentations
2/20 Formal presentations
2/22 Formal presentations

2/25 Formal presentations
2/27 Formal presentations
2/29 Formal presentations

SPRING BREAK

3/10 Summary and Lab exercise - day 1 (begin analysis of white powder)
3/12 Paper #5 - Class discussion led by instructor
3/14 **MIDTERM EXAM**

3/17 Lab exercise - day 2 (continue analysis of white powder)
3/19 Begin journal article discussions (1 student/day)
3/21 Journal article discussions

3/24 Journal article discussions
3/26 Journal article discussions
3/28 Journal article discussions

3/31 Journal article discussions
4/2 Journal article discussions
4/4 Journal article discussions

4/7 Journal article discussions
4/9 Journal article discussions
4/11 Journal article discussions

4/14 Journal article discussions
4/16 Journal article discussions
4/18 Journal article discussions

4/21 Journal article discussions

4/23 Journal article discussions
4/25 Summary of presentations and wrap-up

4/30 FINAL EXAM
8:30 - 11:00 am