

Course Title: *Biological Terrorism and Weapons of Mass Destruction (MSBS 5140)*

Semester Schedule: Fall 2010, class to meet once each week (Mondays) starting 13-September 4:00p - 6:00p Location: ADMC 201A

Instructors: Brendan McCluskey, JD, MPA and Nancy Connell, PhD

General goals: Using historical case studies, this course has been designed to provide students with an appreciation for the real-world insidious applications of biomedical technology to make weapons of mass destruction. At the end of the course, students will have a knowledge of the biology of agents of biological warfare and terrorism and the history of these agents as biological weapons; an appreciation for the overall effects of biological weapons use, including spread in the population and psychological impact; and an understanding of difficulties in enforcement, control, and non-proliferation.

Course structure: The course will meet once a week for 15 weeks (2 hour sessions); during the first class, each student will be assigned an agent/disease to focus on during the semester. The course consists of a combination of lectures/presentations by the instructors and other experts, and presentations by students on their assigned topic. Time will be spent during each class going over news and other noteworthy events that have recently occurred; students are expected to read, watch, and listen to news and other sources to gather information to share with the class regarding biological and other forms of terrorism.

Student Presentations: In addition to lectures, all students will give a comprehensive PowerPoint presentation on their assigned agent/disease (the presentation will be broken up into two segments, each with a different focus). Students are expected to present a “total picture” of their assigned agent, with special emphasis on the biology of the agent; additional specific information on the student presentations will be provided in class. **There will be a strictly enforced time limit for each individual presentation; part of the student’s grade for the presentation will be based on how well the time was used.** Students who are not presenting are expected to have questions prepared to ask the student presenter.

On-line Supplementary Material: Students are expected to also take the on-line mini-course on biosecurity from the Center for Arms Control and Non-proliferation, available at: http://politicsandthelifesciences.org/Biosecurity_course.html; **NOTE: quiz material (Quiz #3) will be drawn from this on-line program.** In addition, the instructors may supplement the coursework with additional material from the University of Pittsburgh Public Health “supercourse,” available at: <http://www.pitt.edu/~super1/>; **NOTE: quiz material (Quiz #2 and/or Quiz #3) may be drawn from this on-line set of programs.**

Quizzes: Three (3) quizzes throughout the semester will be used to gauge students’ understanding of key facts and other information about the agents.

Gaming: <http://www.crazymonkeygames.com/fullscreen.php?game=Pandemic-2> and <http://www.thegreatflu.com/> and (details to be explained in class by the instructors).

Method of Evaluation: In-class presentation (30%), quizzes (30%), in-class participation (10%), and end of semester final paper/project (30%).

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Course Schedule: (subject to change at the discretion of the instructors)

Class 1 (9/13) – Lectures (Connell): Overview/History of WMD

(McCormick): Microbiology I (basic structure/growth)

Class 2 (9/20) – Lectures (Kamlesh): Immunology

(Connell): Pathology/virulence

Class 3 (9/27) – Lectures (McCormick): Microbiology II (specific agents)

(Connell): Detection

Class 4 (10/4) – Lectures (McCluskey) Public Health/Epidemiology

Quiz 1

Class 5 (10/11) – Lectures (McCluskey) Risk – Assessment and Management

(McCluskey): Clandestine Bioweapons Laboratories

Class 6 (10/18) – Lectures (McCluskey): Forensics/Criminology/Legal Issues

(Connell): Biological and Toxin Weapons Convention

Class 7 (10/25) – Lectures (Connell): Biosecurity and Dual-use Technology

Quiz 2

Class 8 (11/1) – Lectures (McCormick): Therapeutics/vaccines

(McCormick): Biosafety

Class 9 (11/8) – Lectures (Cole, invited): Terror Medicine; the Amerithrax Case

Class 10 (11/15) – Lectures (TBA): TBA

(Instructors): Art of Presentations/Scientific Communication

Quiz 3

Class 11 (11/22) – Student Presentations

Class 12 (11/29) – Student Presentations

Class 13 (12/6) – Student Presentations

Class 14 (12/13) – Student Presentations

Class 15 (12/20) – Culminating lecture (TBA) and in-class exercise

Each class will also have time dedicated for discussion of current events, as well as questions for the student presenters (from the instructors and other class members).