



National Consortium for the
Study of Terrorism and Responses to Terrorism

A CENTER OF EXCELLENCE OF THE U.S. DEPARTMENT OF HOMELAND SECURITY BASED AT THE UNIVERSITY OF MARYLAND

UNIVERSITY OF MARYLAND BSST 241

TWISTED SCIENCE: UNDERSTANDING THE PRINCIPLES AND PERILS OF CBRN WEAPONS (LAB)

INSTRUCTORS:

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Course Logistics:

If taken in conjunction with BSST240, BSST241 will count for DSNL (Natural Sciences Lab).

This course will meet from Aug 29 – Dec 8, 2017 on the following Schedule:

Lecture: Tu Th 6pm - 715pm

Lecture Location: JMZ 3203

Lab: F 10am-1230pm

Lab Location: ATL 2352

Course Description: This course in coordination with BSST240, will provide students with a basic, multidisciplinary natural science foundation in chemistry, biology, and physics by exploring the threat of Chemical, Biological, Radiological, and Nuclear (CBRN) weapons. In so doing, it will present a novel yet engaging introduction to scientific principles by examining them through the lens of what might be considered the “dark side” of science. In order to achieve an understanding of CBRN weapons, students must first learn about the scientific method, and certain fundamental principles of chemistry, biology, and physics. Students will also learn how to test hypotheses, use basic statistics, interpret results, and apply their new knowledge through discussions of practical applications in the domains of public health, emergency management, epidemiology, and threat assessment. Lectures will also introduce students to several complex issues surrounding scientific ethics and science and technology policy. In the laboratory section of the course, students will apply their newly acquired knowledge to characterizing the threat of CBRN weapons through the application of basic mathematical modelling and epidemiological techniques, culminating in a quantitative threat assessment simulation.

Learning Outcomes:

By the end of the course, student will be able to:

- Demonstrate proficiency in experimental science by generating and analyzing data using appropriate quantitative tools through START’s Global Terrorism Database and Profiles of Incidents Involving CBRN and Non-State Actors (POICN) Database and additional CBRN Coding, allowing students to use abstract reasoning to interpret data and relevant formulae critical to these scientific fields, and testing hypotheses with scientific rigor through the use of robust scientific modeling procedures for risk, threat, and consequences.

Grading and Assignments

Final grades are determined by the following:

- Lab progress reports– 50% of your grade
- In-lab Participation – 50% of your grade

Participation In-Lab: Attendance and participation is extremely important in lab. Attendance will be taken and students are expected to be engaged and prepared for each lab.

Lab progress reports: After each lab section, students will turn in a progress report to help track the progress through the topics and provide students reference points when compiling the final report for BSST240. Reports will be graded and returned-with comments from the professors to allow for correction before compiling the final reports.

Your grades for all assignments in the course will be numerical values. Numerical scores correspond to letter grades as follows:

A+	98-100	C	73-77
A	93-97	C-	70-72
A-	90-92	D+	68-69
B+	88-89	D	63-67
B	83-87	D-	60-62
B-	80-82	F	0-59
C+	78-79		

CLASS POLICIES:

Student Conduct and Academic Integrity. Students are expected to adhere to the University of Maryland's Code of Student Conduct and to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to demonstrate civility with one another or with the instructor or teaching assistants, will be subject to referral to the Office of Student Conduct or to the Campus Police. The Code of Student Conduct is available online: <http://www.president.umd.edu/policies/docs/v100b.pdf>.

Students are also expected to adhere to the University of Maryland's Code of Academic Integrity and to refrain from acts of academic dishonesty. All students must write the Student Honor Pledge on all assignments:

I pledge on my honor that I have not given or received any unauthorized assistance on this examination.

Any student committing an apparent act of academic dishonesty will be subject to referral to the Student Honor Council. The Code of Academic Integrity is available online: <http://www.president.umd.edu/policies/docs/III-100A.pdf>.

Attendance. Regular attendance and participation in this class is the best way to grasp the concepts and principles being discussed. However, in the event that a class must be missed due to an illness, the policy in this class is as follows:

- For every medically necessary absence from class, a reasonable effort should be made to notify the instructor in advance of the class.
- If a student is absent more than one week (two consecutive course meetings), the student should supply documentation signed by a health care professional.
- If a student is absent on days when in-class simulations/activities are scheduled, he or she is required to notify the instructor in advance, and upon returning to class, bring documentation of the illness, signed by a health care professional. The student may be required to complete a make-up assignment.

Any student submitting falsified documentation of illness will be referred to the Student Honor Council.

Religious Observances. The University System of Maryland policy on religious observances provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due

to individual participation in religious observances. Students must submit a written request to make up a class meeting, assignment, or exam date for the purposes of religious observance by the end of the second week of classes. Please note that accommodations will not be made for travel to and from the site of religious observances. Additional information on religious observance policy is available online: <http://www.english.umd.edu/PoliciesandProcedures/GeneralPolicies/ReligiousObservances.htm>.

Disability Support Services. Any student requesting special accommodations must be registered with the University of Maryland's Disability Support Service (DSS) Office and must provide a DSS Accommodation Form updated for the current semester by the end of the second week of classes. Students who fail to meet this deadline will not receive special accommodations. Additional information on disability support services is available online: <http://www.counseling.umd.edu/DSS>.

SAMPLE

Course Schedule:

This course will meet from Aug 29 – Dec 8, 2017 on the following Schedule:

Lecture: Tu Th 6pm - 715pm

Lecture Location: JMZ 3203

Lab: F 10am-1230pm

Lab Location: ATL 2352

Sept 1: Cory

- **Lab:** Introduction to lab

Sept 8: Gary

- **Lab:** Chemical Agent Characterization

Sept 15: Cory

- **Lab:** Biological Agent Characterization I
 - **Due:** Chemical Agent Characterization Progress Report

Sept 22: Cory

- **Lab:** Biological Agent Characterization II
 - **Due:** Biological Agent Characterization Progress Report I

Sept 29: Gary

- **Lab:** Radiological/Nuclear (RN) Material Characterization
 - **Due:** Biological Agent Characterization Progress Report II

Oct 6: Cory

- **Lab:** Medical, Social and Policy Responses to a CBRN Attack, Part I
 - **Due:** RN Material Characterization Progress Report

Oct 13: Cory

- **Lab:** Medical, Social and Policy Responses to a CBRN Attack, Part II
 - **Due:** Medical, Social and Policy Response Progress Report I

Oct 20: Gary

- **Lab:** Consequence Assessment Modeling
 - **Due:** Medical, social and Policy Response Progress Report II

Oct 27: Gary

- **Lab:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part I
 - **Due:** Consequence Assessment Modeling Progress Report

Nov 3: Gary

- **Lab:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part II

- **Due:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part I Progress Report
- **Threat Assessment Modeling Parts I & II Progress Report**

Nov 10: Cory

- **Lab:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part III
 - **Due:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part II Progress Report

Nov 17: Gary

- **Lab:** Vulnerability Assessment Modeling
 - **Due:** Empirical Analysis Using START Databases (Profiles of Incidents Involving CBRN and Non-State Actors (POICN) and Global Terrorism Database (GTD)),Part III Progress Report

Nov 24:

- **NO CLASS (THANKSGIVING BREAK)**

Dec 1: Gary

- **Lab:** Threat Assessment Modeling
 - **Due:** Vulnerability Assessment Progress Report

Dec 8: Gary

- **Lab:** Final Exam Review
 - **Due:** Threat Assessment Progress Report