
PubH 7258 Section 101 Class #88330
Data Driven and Time-sensitive Decision Making
May Term 2017

Credits:	1 credit
Meeting Days/Time:	May 30 9:00am-12:00pm May 31, June 1, 2 8:00am-12:00pm
Meeting Place:	Blegen Hall – Room TBN
Instructor:	Amy Kircher, DrPH Associate Director National Center for Food Protection and Defense (NCFPD) University of Minnesota
Office Address:	120 LES Building 1954 Buford Av St Paul, MN 55108
Office Phone:	612-626-6421
E-mail:	akircher@umn.edu
Office Hours:	By Appointment

I. Course Description

This course aims to provide knowledge and equip students with techniques to transform data into information that decision makers can use in order to make time critical decisions. It has been well documented that decision-making during a crisis is difficult as information is limited and established procedures may not be followed, thus increasing the amount of stress on individuals required to make those decisions. To improve crisis decision-making data collection, analysis, and synthesis an abundant and wide-variety of data are required in order to make an informed decision. This course will have didactic and application components where students will be able to apply the skills knowledge learned.

Competencies

The core competencies in Public Health Preparedness and Response identified in the CDC planning model that apply to this course include:

Domain 1: Model Leadership

- 1.1 Solve problems under emergency conditions
- 1.4 Maintain situational awareness

Domain 2: Communicate and Manage Information

- 2.1 Manage information related to an emergency
- 2.3 Report information through chain of command
- 2.5 Manage the recording of data according to protocol

The Health Resources and Services Administration (HRSA), an agency of the U.S. Department of Health and Human Services, is the primary Federal agency for improving access to health care by strengthening the health care workforce, building healthy communities and achieving health equity. Core competencies identified in the Council of Linkages model supported by HRSA are a set of skills that improve public health practice performance. Those competencies that apply to this course include:

1. Analytic/Assessment Skills Tier 2:

- 3. Generates variables that measure public health conditions
- 4. Uses methods and instruments for collecting valid and reliable quantitative and qualitative data
- 5. References sources of public health data and information
- 6. Examines the integrity and comparability of data
- 7. Identifies gaps in data sources
- 9. Interprets quantitative and qualitative data
- 10. Makes community-specific inferences from quantitative and qualitative data
- 11. Uses information technology to collect, store, and retrieve data

3. Communication Skills Tier 2:

- 2. Communicates in writing and orally, in person, and through electronic means, with linguistic and cultural proficiency

6. Public Health Science Skills Tier 2:

- 3. Relates public health science skills to the Core Public Health Functions and Ten Essential Services of Public Health

8. Leadership and Systems Thinking Skills Tier 2:

- 2. Incorporates systems thinking into public health practice
- 4. Analyzes internal and external problems that may affect the delivery of Essential Public Health Services

II. Course Prerequisites

None

III. Course Goals and Objectives

At the end of this course, participants will be able to:

- 1) Describe the challenges of decision making in time-sensitive situations;
- 2) Identify methods for solving applied problems;
- 3) Apply analytical techniques that enhance decision making by converting data to information;
- 4) Apply methods for interpretation of analyzed data
- 5) Explain the role of technology in the collection and application of data for data-based decision making;
- 6) Communicate data effectively both in written and oral presentations;
- 7) Apply data driven decision making using practical examples from a wide spectrum of fields.

IV. Methods of Instruction and Work Expectations

This course combines lectures with readings, exercises, demonstrations, and hands on activities. Students will be expected to spend about 1-2 hours reading materials and completing assignments before each class. Grades will be assigned for class participation, assignments, and participation in an exercise during the last class.

Assignments (60% of course grade). Three assignments will be assigned during the course. These assignments will be due during the class following the one in which they are handed out. The goal of

these assignments is to help students apply knowledge gained in using data to make decisions. Assignments will be graded on a 20-point scale. Late work will be penalized 10% per day it is late.

Exercise (25% of course grade). During the last day of class, students will participate in an exercise that allows for the application of coursework. Students will be asked to articulate their decisions and data usage in a documented manner that is handed in for final grading.

Student participation (15% of course grade). Students will be able to obtain full credit for classroom participation by asking questions and participating in discussions and hands-on activities.

V. Course Text and Readings

The required and optional readings are available through the UMN Library, which can be accessed through the course Moodle site.

Access Course Moodle Site

- go to www.umn.edu click on the “myU” button
- login with your University ID and password
- scroll to your course and click on the Moodle site link

Required Text:

- Predictably Irrational, Revised and Expanded Edition: The Hidden Forces That Shape Our Decisions - Dan Ariely; Paperback. ISBN-10: 0061353248 E-version also available on Kindle, Nook and iBook

Readings:

During the course assigned readings will be made available in the course Moodle page. Additional readings will be provided no later than two weeks preceding the course start date.

- Danielsson, M., and Ohlsson, K., *Decision Making in Emergency Management: A Survey Study*. International Journal of Cognitive Ergonomics, 1999. **3**(2): p. 8. Use U of M Libraries
- Matthew, R.A., and McDonald, R., *Cities under Siege: Urban Planning and the Threat of Infectious Disease*. Journal of the American Planning Association, 2006. **72**(1): p. 9. Use U of M Libraries
- Stubbart, C.I., *Improving the Quality of Crisis Thinking*. Columbia Journal of World Business, 1987. **22**(1): p. 10. Use U of M Libraries
- Kaempf, G.L., Klein, G., Thordsen, M.L., and Wolf, S., *Decision Making in Complex Naval Command-and-Control Environments*. Human Factors, 1996. **38**(2): p. 220. Use U of M Libraries
- Smart, C., and Vertinsky, I., *Designs for Crisis Decision Units*. Administrative Science Quarterly, 1977. **22**(4): p. 640-657. Use U of M Libraries
- Harrauld J. and Mazzuchi, T., *Planning for Success: A Scenario-Based Approach to Contingency Planning Using Expert Judgment*. Journal of Contingencies and Crisis Management, 1993. **1**(4): p. 189-198. Use U of M Libraries
- Clark, J., and Harman, M., *On Crisis Management and Rehearsing a Plan*. Risk Management Magazine, 2004: p. 4. Use U of M Libraries

VI. Course Outline/Weekly Schedule

Pre-Course Assignment	<ul style="list-style-type: none"> ▪ Read required text <p><u>Predictably Irrational, Revised and Expanded Edition: The Hidden Forces That Shape Our Decisions</u> - Dan Ariely; Paperback.</p> <p>Available at UMN Bookstore, Amazon or Barnes and Noble. E-version also available for Kindle, Nook and iBook</p>
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Day 1	<ul style="list-style-type: none"> ▪ Introductions, course overview and student expectations ▪ Decision Theory ▪ Understanding the pace of crisis ▪ Using good science to inform decisions: Data's role ▪ Case Study
Day 2	<ul style="list-style-type: none"> ▪ Weighing the facts: Data Assessment ▪ Asking the right questions and understanding root cause ▪ Predictably irrational ▪ Lying and uncovering lies with statistics ▪ Case Study
Day 3	<ul style="list-style-type: none"> ▪ Implications of your decision ▪ Politics and decision making ▪ Case Study
Day 4	<ul style="list-style-type: none"> ▪ Decision making in the absence of data ▪ Packaging and delivering good data for decision making ▪ Exercise (Student participation)

VII. Evaluation and Grading

Student evaluation will be based on the following:

- Class participation (15 points, 15% of grade)
- Homework assignments (60 points, 60% of grade)
- Exercise (25 points, 25% of grade)

All coursework and assignments should be completed prior to start of each class session. Late work will be penalized 10% per day it is late.

This course is offered A/F or S/N

- **S Represents achievement that is satisfactory, which is equivalent to a C- or better.**
- **A/F letter grade will be determined by total effort as follows:**

A	4.000 (94-100 points/percent) Represents achievement that is outstanding relative to the level necessary to meet course requirements
A-	3.667 (90-93 points/percent)
B+	3.333 (87-89 points/percent)
B	3.000 (83-86 points/percent) Represents achievement that is significantly above the level necessary to meet course requirement
B-	2.667 (80-82 points/percent)
C+	2.333 (77-79 points/percent)
C	2.000 (73-76 points/percent) Represents achievement that meets the course requirements in every respect

C-	1.667 (70-72 points/percent)
D+	65-69 (points/percent) 1.333
D	1.000 (60-64 points/percent) Represents achievement that is worthy of credit even though it fails to meet fully the course requirements
F	Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.
S	Represents achievement that is satisfactory, which is equivalent to a C- or better.

For additional information, please refer to:

<http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html>.

Course Evaluation

The SPH will collect student course evaluations electronically using a software system called CoursEval: www.sph.umn.edu/courseeval. The system will send email notifications to students when they can access and complete their course evaluations. Students who complete their course evaluations promptly will be able to access their final grades just as soon as the faculty member renders the grade in SPHGrades: www.sph.umn.edu/grades. All students will have access to their final grades through OneStop two weeks after the last day of the semester regardless of whether they completed their course evaluation or not. Student feedback on course content and faculty teaching skills are an important means for improving our work. Please take the time to complete a course evaluation for each of the courses for which you are registered.

Incomplete Contracts

A grade of incomplete “I” shall be assigned at the discretion of the instructor when, due to extraordinary circumstances (e.g., documented illness or hospitalization, death in family, etc.), the student was prevented from completing the work of the course on time. The assignment of an “I” requires that a contract be initiated and completed by the student before the last official day of class, and signed by both the student and instructor. If an incomplete is deemed appropriate by the instructor, the student in consultation with the instructor, will specify the time and manner in which the student will complete course requirements. Extension for completion of the work will not exceed one year (or earlier if designated by the student’s college). For more information and to initiate an incomplete contract, students should go to SPHGrades at: www.sph.umn.edu/grades.

University of Minnesota Uniform Grading and Transcript Policy - A link to the policy can be found at onestop.umn.edu.

VIII. Other Course Information and Policies

Grade Option Change (if applicable)

For full-semester courses, students may change their grade option, if applicable, through the second week of the semester. Grade option change deadlines for other terms (i.e. summer and half-semester courses) can be found at onestop.umn.edu. **The grading option for Public Health Institute courses may not be changed after the second day of class for 4-day courses. Grading options for 2 day courses may not be changed after the first day class.**

Course Withdrawal

Students should refer to the Refund and Drop/Add Deadlines for the particular term at onestop.umn.edu for information and deadlines for withdrawing from a course. As a courtesy, students should notify their instructor and, if applicable, advisor of their intent to withdraw.

Students wishing to withdraw from a course after the noted final deadline for a particular term must contact the School of Public Health Office of Admissions and Student Resources at sph-ssc@umn.edu for further information.

Student Conduct Code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see:

http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal Electronic Devices in the Classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference:

<http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

Scholastic Dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code:

http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see:

<http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html>.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see:

<http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>.

Appropriate Student Use of Class Notes and Course Materials

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in

effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: <http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

Equity, Diversity, Equal Opportunity, and Affirmative Action

The University will provide equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

Disability Accommodations

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. Disability Services (DS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, <https://diversity.umn.edu/disability/>.

Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

The Office of Student Affairs at the University of Minnesota

The Office for Student Affairs provides services, programs, and facilities that advance student success, inspire students to make life-long positive contributions to society, promote an inclusive environment, and enrich the University of Minnesota community.

Units within the Office for Student Affairs include, the Aurora Center for Advocacy & Education, Boynton Health Service, Central Career Initiatives (CCE, CDes, CFANS), Leadership Education and Development–Undergraduate Programs (LEAD-UP), the Office for Fraternity and Sorority Life, the Office for Student Conduct and Academic Integrity, the Office for Student Engagement, the Parent Program, Recreational Sports, Student and Community Relations, the Student Conflict Resolution Center, the Student Parent HELP Center, Student Unions & Activities, University Counseling & Consulting Services, and University Student Legal Service.

For more information, please see the Office of Student Affairs at <http://www.osa.umn.edu/index.html>.

Academic Freedom and Responsibility: for courses that do not involve students in research

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this

freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

OR:

Academic Freedom and Responsibility, for courses that involve students in research

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom and conduct relevant research. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.* When conducting research, pertinent institutional approvals must be obtained and the research must be consistent with University policies.

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".

Template update 9/2014