STAT/MPH 701 – Spring 2015
Fundamental Methods of Biostatistics

Instructor: Wei-Wen Hsu, PhD
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Office Hours: Monday, Wednesday 11am-12pm

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Course Description: STAT/MPH 701 is designed for students in health sciences and covers most of the standard topics in an introductory course in Statistics. STAT/MPH 701 covers descriptive statistics, basic probability theory, discrete and continuous distributions, estimation, hypothesis testing, and linear regression.

Learning Objectives: At the end of the class, all students are expected to understand the fundamental concepts in Statistics and be able to perform some basic analyses and interpret the statistical results correctly. Specifically, they are expected to be able to appropriately:

1. Apply descriptive and inferential methodologies for testing specific public health or research hypotheses according to the type of study design and measurement scale.
2. Apply basic informatics techniques in the acquisition of public health data and in the analysis of survey and experiential designs.

Text: *Biostatistics for the Health Sciences* by R. Clifford Blair and Richard A. Taylor: Prentice-Hall, 2008.

Teaching and learning materials: The lecture slides and video modules are originally developed by the text author Dr. R. Clifford Blair, a former adjunct professor who taught this course before.

Software: Students can do their exercises or assignments with any statistical software package (e.g. SAS, Minitab, SPSS and R), but Minitab is mainly introduced in the text. However, most of the exercises are usually direct applications of the concepts or methods discussed in the text and can be carried out on a calculator.

Calculator: A calculator with basic functions (+ - × ÷) and advanced functions (logarithms, exponents, and factorial key etc.) is required.

Grading: Final grades will be based on three exams (**Exam 1: 20%, Exam 2: 25%, Exam 3: 25%**), and **written homework** (**30%**).

The final letter grades will be assigned as follows.

A	≥ 90
B	80-89
C	70-79
D	60-69
F	<60

Homework: Problems assigned for homework should be submitted for grading. Each student must turn in written answers that reflect his or her own understanding of the material. The written homework (scanned) should be submitted to K-State Online by the due date (NOT to your instructor or graduate assistant). **NO late homework will be accepted**. If you don't have easy access to a scanner or copy machine to get your homework scanned, you may use your camera or cellphone camera instead, as long as your homework is clear and readable for grading.

Examinations: The exams will be online exams. The three exams are scheduled on

Exam 1: Complete the exam between 02/25/2015 and 03/01/2015,
Exam 2: Complete the exam between 04/08/2015 and 04/12/2015,
Exam 3: Complete the exam between 05/11/2015 and 05/15/2015.

Students should complete the exam online during the assigned week. Please note that, students only have **ONE-TIME** access to each of the exams and once you start the exam, you have to complete it WITHIN **3 HOURS**.

Make-up policy: There will be NO make-up exams (unless it is documented with medical conditions or other personal emergencies). NO late homework will be accepted.

Extra Credits: There is no extra credit offered in this course.

Assistance: The most efficient way of obtaining assistance for your questions is by posting a message on the STAT/MPH 701 Discussion Board. Your instructor or graduate assistant will check this board at least once a day and will respond quickly. It is also beneficial from your query for other students if they have the same question. This also gives other students an opportunity to offer their insights.

You also can contact the instructor or graduate assistant via email directly. If needed, your instructor can set up a meeting via ZOOM to go through the questions with you.

For students who are on Manhattan campus, you are more than welcome to stop by during the office hours or by appointment.

Important dates (Spring 2015):
1/20 First day of classes
2/09 Last day for 100% refund for a regular session course
2/16 Last day for 50% refund for a regular session course
2/24 Last day to drop a regular session course without a *W* being recorded
3/16 – 3/20 Student Holiday
3/30 Last day to drop a regular session course
5/08 Last day of classes
5/11 – 5/15 Final exams

Tentative list of topics and schedule.

Week	Date	Topics	Chapter	Assignments
1	01/19 - 01/23	Foundations of Biostatistics and Descriptive Methods 1.2 Populations and Samples 1.3 Parameters and Statistics 1.4 Descriptive and Inferential Statistics 2.2 Scales of Measurement	Chapters 1 & 2	**Reading:** Chapter 1 (1.1-1.4) & Chapter 2 (2.1-2.2) **Slides:** Chapter 1 slides (pp.1-9) **Video:** Module 1- Part 01 (1.1-1.4, Time: 17.19) Module 2- Part 01 (2.1-2.2, Time: 17:05) **Homework 1 - Chapter 1 Exercise 1.2** **Due 1/30 (Fri.), scan and submit to KSOL**
2	01/26 - 01/30	Descriptive Methods 2.3 Summation Notation 2.4 Distributions 2.5 Graphs	Chapter 2	**Reading:** Chapter 2 (2.3-2.5) **Slides:** Chapter 2 slides- Part 01 (pp.1-32) **Video:** Module 2- Part 02 (2.3, Time: 12:06) Module 2- Part 03 (2.4, Time: 17:58) Module 2- Part 04 (2.5, Time: 16:30)
3	02/02 - 02/06	Descriptive Methods 2.6 Numerical Methods 2.6.1 Measures of Central Tendency 2.6.2 Measures of Variability 2.6.3 Measures of Relative Position 2.6.4 Measures of Distribution Shape	Chapter 2	**Reading:** Chapter 2 (2.6.1-2.6.4, but omit the discussion of "Percentile Ranks", pp.40-44) **Slides:** Chapter 2 slides- Part 01 (pp.33-50) Chapter 2 slides- Part 02 (pp.1-45) **Video:** Module 2- Part 05A (2.6.1, Time: 16:30) Module 2- Part 05B (2.6.2, Time: 22:42) Module 2- Part 05C (2.6.3-2.6.4, Time: 18:55) **Homework 2 – Chapter 2 Exercise 2.2** **Due 2/13 (Fri.), scan and submit to KSOL**

Week	Date	Topics	Chapter	Assignments
4	02/09 - 02/13	Probability 3.2 A Definition of Probability 3.3 Contingency Table 3.3.1 Sampling from the Population 3.3.2 Frequency Tables 3.3.3 Probability Tables 3.3.4 Independence 3.3.5 Sensitivity, Specificity, and Related Concepts 3.3.6 Risk and Odds Ratios	Chapter 3	**Reading:** Chapter 3 (3.1-3.3.6) Omit: section 3.3.7 **Slides:** Chapter 3 slides- Part 01 (pp.1-37) **Video:** Module 3- Part 01 (3.1-3.3.3, Time: 19:36) Module 3- Part 02 (3.3.4-3.3.6, Time: 20:12)
5	02/16 - 02/20	Probability 3.4 Normal Curve 3.4.1 Sampling from the Population 3.4.2 Some Characteristics of the Normal Curve 3.4.3 Finding Areas Under the Normal Curve 3.4.4 Using the Normal Curve to Approximate Probabilities	Chapter 3	**Reading:** Chapter 3 (3.4.1-3.4.4) **Slides:** Chapter 3 slides- Part 02 (pp.1-29) **Video:** Module 3- Part 03 (3.4.1-3.4.2, Time: 20:54) Module 3- Part 04 (3.4.3-3.4.4, Time: 23:58) **Homework 3 – Chapter 3 Exercise 3.3-3.12** **Due 2/27 (Fri.), scan and submit to KSOL**
6	02/23 - 02/27	Introduction to Inference and One Sample Method 4.2 Sampling Distribution 4.2.1 Definition 4.2.2 The Sampling Distribution of $\bar{x}$ 4.2.3 Using the Normal Curve to Approximate Probabilities Associated with $\bar{x}$	Chapter 4	**Reading:** Chapter 4 (4.1-4.2.3) **Slides:** Chapter 4 slides- Part 01 (pp.1-16) **Video:** Module 4- Part 01 (4.1-4.2.3, Time: 21:42) **Exam 1** **coverage: Chapters 1 & 2 & 3** **Please complete this exam on KSOL by 3/1 (Sun.)**

Week	Date	Topics	Chapter	Assignments
7	03/02 - 03/06	Introduction to Inference and One Sample Method 4.2.4 The Sampling Distribution of $\hat{p}$ 4.2.5 Using the Binomial Distribution to Approximate Probabilities associated with $\hat{p}$ 4.2.6 Using the Normal Curve to Approximate Probabilities Associated with $\hat{p}$	Chapter 4	**Reading:** Chapter 4 (4.2.4-4.2.6) **Slides:** Chapter 4 slides- Part 01 (pp.17-50) **Video:** Module 4- Part 02 (4.2.4, Time: 18:54) Module 4- Part 03 (4.2.5-4.2.6, Time: 24:23)
8	03/09 - 03/13	Introduction to Inference and One Sample Method 4.3 Hypothesis Testing 4.3.2 Rationale and Method 4.3.3 The One Mean Z Test	Chapter 4	**Reading:** Chapter 4 (4.3-4.3.3) **Slides:** Chapter 4 slides- Part 02 (pp.1-33) **Video:** Module 4- Part 04 (4.3-4.3.3, Time: 19:29) Module 4- Part 05 (4.3.3, Time: 19:27) Module 4- Part 06 (4.3.3, Time: 20:51) **Homework 4 – Chapter 4** **Exercise 4.1, 4.2, 4.3, 4.5, 4.8** **Due 3/23 (Mon.), scan and submit to KSOL**
9	03/16 - 03/20	Student Holidays (No class)		
10	03/23 - 03/27	Introduction to Inference and One Sample Method 4.3.4 The One Mean t Test 4.3.5 One Sample Tests for a Proportion 4.3.7 Errors and Correct Decisions in Hypothesis Testing	Chapter 4	**Reading:** Chapter 4 (4.3.4-4.3.7) Omit section 4.3.6 **Slides:** Chapter 4 slides- Part 02 (pp.34-42) Chapter 4 slides- Part 03 (pp.1-27) **Video:** Module 4- Part 07 (4.3.4, Time: 15:08) Module 4- Part 08 (4.3.5, Time: 18:20) Module 4- Part 09 (4.3.7, Time: 19:06)

Week	Date	Topics	Chapter	Assignments
11	03/30 - 04/03	Introduction to Inference and One Sample Method 4.4 Confidence Intervals 4.4.2 Rationale and Method 4.4.3 A Note of Caution 4.4.4 Confidence Interval for μ When σ is Know 4.4.5 Confidence Interval for μ When σ is Not Know 4.5 Comparison of Hypothesis Tests and Confidence Intervals 4.5.1 Two-Tailed Hypothesis Tests and Two-Sided Confidence Intervals 4.5.3 Some Additional Comments	Chapter 4	**Reading:** Chapter 4 (4.4-4.5.3) Omit: section 4.5.2 & the discussion of one-sided confidence intervals on page 140 and 144 **Slides:** Chapter 4 slides- Part 04 (pp.1-40) **Video:** Module 4- Part 10 (4.4.1-4.4.4, Time: 21:57) Module 4- Part 11 (4.4.5-4.5.3, Time: 22:52) **Homework 5 – Chapter 4** **Exercise 4.9, 4.14 (don't compare two p-values), 4.16, 4.17, 4.18, 4.19** **4.21, 4.22, 4.23, 4.24** **Due 4/10 (Fri.), scan and submit to KSOL**
12	04/06 - 04/10	Paired Samples Methods 5.2 Methods Related to Mean Difference 5.2.1 The Paired Samples (Difference) t Test 5.2.3 Confidence Interval for Paired Samples Mean Difference 5.2.4 Assumptions	Chapter 5	**Reading:** Chapter 5 (5.1-5.2.4) Omit section 5.2.2 **Slides:** Chapter 5 slides- Part 01 (pp.1-17) **Video:** Module 5- Part 01 (5.1-5.2.4, Time: 17:49) **Exam 2** **coverage: Chapter 4** **Please complete this exam on KSOL by 4/12 (Sun.)**

Week	Date	Topics	Chapter	Assignments
13	04/13 - 04/17	Paired Samples Methods 5.3 Methods Related to Proportions 5.3.1 McNemar's Test of a Paired Samples Proportion 5.3.3 Confidence Interval for a Paired Samples Proportion 5.4 Method Related to Paired Samples Risk Ratios 5.4.2 Test of the Hypothesis RR=1 for Paired samples 5.4.4 Confidence for a Paired Samples Risk Ratio 5.4.5 Assumptions 5.5 Methods Related to Paired Samples Odds Ratios 5.5.2 Test of the Hypothesis OR=1 for Paired Samples 5.5.4 Confidence Interval for a Paired Samples Odds Ratio 5.5.5 Assumptions	Chapter 5	**Reading:** Chapter 5 (5.3-5.5.5) Omit: sections 5.3.2, 5.4.3, 5.5.3 **Slides:** Chapter 5 slides- Part 02 (pp.1-22) Chapter 5 slides- Part 03 (pp.1-24) **Video:** Module 5- Part 02 (5.3-5.4.1, Time: 19:20) Module 5- Part 03 (5.4.1-5.4.2 & 5.5.1-5.5.2, Time: 20:20) Module 5- Part 04 (5.5.4, Time: 19:20) **Homework 6 – Chapter 5** **Exercise 5.1, 5.4, 5.5** **Due 4/24 (Fri.), scan and submit to KSOL**
14	04/20 - 04/24	Two Independent Samples Methods 6.2 Methods Related to Differences Between Means 6.2.1 The Independent Samples t Test 6.2.3 Confidence Interval for the Difference Between Means of Two Independent Samples 6.2.4 Assumptions 6.3 Methods Related to Proportions 6.3.1 An Independent Samples Test for the Difference Between Proportions 6.3.3 Confidence Interval for a Difference Between Proportions Based on Two Independent samples	Chapter 6	**Reading:** Chapter 6 (6.1.3-6.3.4) Omit: sections 6.2.2 & 6.3.2 **Slides:** Chapter 6 slides- Part 01 (pp.1-22) Chapter 6 slides- Part 02 (pp.1-14) **Video:** Module 6- Part 01 (6.1-6.2.1, Time: 19:13) Module 6- Part 02 (6.2.3 & 6.3.1 & 6.3.3, Time: 18:52)

Week	Date	Topics	Chapter	Assignments
15	04/27 - 05/01	Two Independent Samples Methods 6.4.2 Test for the Hypothesis RR=1 for Independent Samples 6.4.4 Confidence Interval for the Independent Samples Risk Ratio 6.4.5 Assumptions 6.5 Methods Related to Independent Samples Odds Ratios 6.5.2 Test of the Hypothesis OR=1 for Independent Samples 6.5.4 Confidence Interval for the Independent Samples Odds Ratio 6.5.5 Assumptions 6.5.6 Estimating Risk of Disease from Case-Control data	Chapter 6	**Reading:** Chapter 6 (6.4.1-6.5.6) Omit: sections 6.4.3 & 6.5.3 **Slides:** Chapter 6 slides- Part 02 (pp.14-29) Chapter 6 slides- Part 03 (pp.1-20) **Homework 7 – Chapter 6** **Exercise 6.1, 6.3, 6.5, 6.7, 6.8** **Due 5/08 (Fri.), scan and submit to KSOL**
16	05/04 - 05/08	Linear Regression 9.2 Simple Linear Regression 9.2.1 Calculation of a and b 9.2.2 The Residual and Regression Sums of Squares and the Coefficients of Determination and Nodetermination 9.2.3 A Note on the Calculation of SS_{res} and SS_{reg} 9.2.4 Further Comments on the Coefficients of Determination and Nondetermination 9.2.5 Inference Regarding b and $\hat{R}^2$ 9.2.6 A logical Inconsisitency	Chapter 9	**Reading:** Chapter 9 (9.1-9.2.6 only) **Slides:** Chapter 9 slides- Part 01 (pp. 1-29) **Homework 8 – Chapter 9** **Exercise 9.1(c)(d), 9.4(a)(b)(c)** **Due 5/13 (Wed.), scan and submit to KSOL**
17	05/11 - 05/15	**Week: Final Exam**	**Exam 3** **Coverage: Chapters 5 & 6 & 9** **Please complete this exam on KSOL by 5/15 (Fri.)**	

Academic integrity: Kansas State University has an Honor & Integrity System based on personal integrity which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor & Integrity System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning.

A component vital to the Honor & Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."

The default in this class is that ALL work will be accomplished individually, UNLESS my permission is given in advance of an assignment/quiz/exam/take-home exam/final. If you are in doubt, please ask A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For more information, visit the Honor & Integrity System home web page at: http://www.k-state.edu/honor/

HMD/MPH 720: ADMINISTRATION OF HEALTH CARE ORGANIZATIONS
Kansas State University

Spring 2015

Course description:	A comprehensive review of today's health care institutions and their response to the economic, social/ethical, political/legal, technological, and ecological environments.
Credit hours:	3 hours
Instructor:	Jennifer Hanson, PhD, RD, CSSD, LD 148A Justin Hall 532-2212 jhanson2@ksu.edu
Office Hours:	Monday 8:00 AM-9:00 AM & 2:00 PM-3:00 PM (or by appointment)

Course Objectives
By the end of this course, students should be able to:

1. Describe the complex and turbulent environment in which health care organizations operate.
2. Discuss the various players in the healthcare system including third-party payers, health care providers, the healthcare workforce, and the consumers of healthcare.
3. Understand demographic and other trends which are having an impact on healthcare in the United States.
4. Describe the leadership and managerial skills necessary for excellence in today's healthcare business environment.
5. Become familiar with the many issues faced by health care administrators in their managerial positions

Course Materials

Delivering Health Care in America: A Systems Approach Enhanced 6th Edition
(2015) Shi & Singh, Jones and Bartlett Learning.

Technical Requirements - In addition to K-State Online (KSOL) you will also need to have the following software programs: Microsoft Office (Word & PowerPoint) and Adobe Reader.

Course Requirements:

1. Reading Assignments. Reading assignments are listed on the tentative course outline which is found on the last pages of the syllabus. These reading assignments will include a combination of textbook chapters, articles, links and presentations.

2. Assignments. Students will complete two reflection papers (25 points each), a stakeholder interview assignment (125 points), and two on-line assignments (25 points each). Details for the assignments will be posted on KSOL.

3. Quizzes: Five quizzes (20 points each) will be given. However, your will be allowed to drop your lowest quiz grade (or missed quiz). Your course grade will be based on your best four quiz scores. Unless, I receive official university documentation justifying your absence from class, make-up quizzes will not be permitted.

4. Midterm Exams: Two midterm exams (100 points each) will be given. Dates are posted on the tentative schedule.

5. Random class activities and attendance points. Points (2-5 points) will be awarded randomly for class participation and attendance. Make-ups will not be allowed.

6. Extra credit points for attendance at the 41st Grace M. Shugart Lecturer which is Thursday April 16th at 1:30 in Forum Hall/K-State Union or complete an alternate activity (5 points).

7. Final Exam: Comprehensive and worth 150 points.

Evaluation

Reflection Paper (2 @ 25 points each)	50
Stakeholder Interview Assignment	125
Online Assignments (2 @ 25 points each)	50
Quizzes (4 @ 25 points each)	100
Mid-term Exams (2 @ 100 points each)	200
Random Class Activities & Attendance	~20
Final Exam	150
Extra Credit	
41st Grace M. Shugart Lecturer or alternate activity*	5
TOTAL:	~695 points

*Alternate assignment available

A = 90%, B = 80%, C = 70%, D = 60%, F = <60%

K-State Online (KSOL)
Course materials, assignments, and your current grades will be located on KSOL. Should I need to contact you outside of class, I will do so through KSOL. It would be beneficial to check your e-mail at least once daily.

Grades
It is my goal to have quiz/exam scores posted within a week. Papers may take a little longer. Please notify me immediately should you notice a discrepancy. In the event of a question regarding a final grade, it will be the responsibility of the student to retain graded materials which have been returned for student possession during the quarter.

Assignment Turn-In and Due Dates
All work turned in must include your first and last name. Assignments are to be turned in via KSOL prior to 5:00 PM on the day they are due. For each calendar day that an assignment or paper is turned in late, 10% of the point value for the assignment will be deducted. If you have an emergency or compelling reason to miss a due date, please contact me as soon as possible *prior* to the due date to discuss possible arrangements. Please note that vacations, busy schedules, business trips, etc. are not compelling reasons for extending due dates. Therefore, it will be up to the discretion of the instructor to consider these on a case-by-case basis.

Make-Up Policy
Make-up exams will be given only to those students who were excused *prior* to the scheduled due date of the exam. Taking a make-up exam is a privilege, not a right, and will be granted only in rare circumstances. Only students with an officially documented emergency will be allowed to take a make-up (alternate) exam. Because students are allowed to drop their lowest quiz score, only one make-up quiz will be permitted.

Early Administration of Final Exams
The HMD Department follows the schedule of examinations published on-line. The policy of Kansas State University is not to allow the early administration of final exams. The department adheres to this policy.

Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation. Work will be checked for plagiarism or copying papers or content directly from the internet, and if found will be treated as cheating. When referring to an idea or information from another source you must cite the author and year of publication. If using materials word for word, you must use quotation

marks. In general, lengthy quotations should be avoided. **Unless clearly specified otherwise, all work in this course is to be completed individually.**

Student Access
Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Expectations for Classroom Conduct
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Campus Safety Statement
Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Academic Freedom Statement
Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.
Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

Course Modifications
Instructor reserves the right to make changes in HMD 220 as need may arise during the semester.

HMD 720: Tentative Schedule

Dates:	Event/ Topic:	Readings:
1/21-1/25	Course Overview/Syllabus The U.S. Healthcare System	 Chapter 1
1/26-2/01	Beliefs Values and Health Insurance Terminology	Chapter 2 Material(s) as Assigned KSOL
2/02-2/08	History of Health Services in the U.S. **Quiz One (2/4)** Health Professionals	Chapter 3 Chapter 4
2/09-2/15	Health Services Financing	Chapter 6
2/16-2/22	**Reflection Paper One (2/16)** Outpatient Care Public & Community Health Services	 Chapter 7 Material(s) as Assigned KSOL
2/23-3/01	Inpatient Facilities and Services **Quiz Two (2/25)**	Chapter 8 Material(s) as Assigned KSOL
3/02-3/08	Long-term Care Qualitative Studies	Chapter 10 Material(s) as Assigned KSOL
3/09-3/13	Review Case Study **Exam 1 (3/11)** **Online Assignment One (3/13)**	Material(s) as Assigned KSOL
3/14-3/22	Spring Break	
3/23-3/29	Managed Care and Integrated Organizations **Quiz Three (3/25)**	Chapter 9
3/30-4/05	**Reflection Paper Two (3/30)** Cost, Access, and Quality	 Chapter 12
4/06-4/12	**Quiz Four (4/08)** Special Populations	Material(s) as Assigned KSOL Chapter 11
4/13-4/19	Health Policy **41st Grace M. Shugart Lecturer** (or alternate assignment)	Chapter 13 1:30 PM Forum Hall/K-State Union.

4/20-4/26	**Quiz Five (4/22)**	
	Technology	Chapter 5
	HIPPA	
	O**nline Assignments Two (4/24)**	
4/27-5/03	**Exam 2 (4/27)**	
	Security, Infection Control, Disasters	Material(s) as Assigned on KSOL
	Stakeholder Interviews Due (5/1)	
5/04-5/08	Leadership & Management	Material(s) as Assigned on KSOL
	Share Interview Summaries (5/6)	Material(s) as Assigned on KSOL
	Final Review	
5/14	**FINAL EXAM (11:50 AM – 1:40 PM)**	Comprehensive

DMP 754 & MPH 754: Introduction to Epidemiology

Course Instructor: Bob Larson

Course Description

Introduction to Epidemiology (DMP/MPH 754) provides a graduate-level introduction to epidemiology. The purpose of this course is to establish the basic principles and methods of epidemiology in order for students to recognize and understand how disease affects populations (and the associated implications for individuals), and to introduce the application of these principles and methods for disease diagnosis, treatment, prevention, and control. For students wanting to pursue further training in epidemiology, Intermediate Epidemiology (DMP 854) and Advanced Epidemiology (DMP 954) are available.

The main goal is to enable you to *understand and apply* the fundamental concepts of epidemiology, so that you can *use epidemiologic methods to solve current and future challenges* during your professional training and throughout your career.

Course available on k-state online. Sign in at: http://public.online.ksu.edu/

Textbooks:

Required – Epidemiology 4th Edition (Leon Gordis)

Optional - Introduction to Epidemiology 5th Edition (Ray M. Merrill)

This textbook is definitely not required, but some students like to have more than one perspective and method of explaining epi concepts.

INSTRUCTOR:

Bob Larson DVM, PhD
Mosier Hall Q217
785-532-4257
rlarson@vet.k-state.edu
Contact to set up appointments as needed

I am Bob Larson, and I would like to welcome you to the DMP 754, Introduction to Epidemiology course. Even though this is an online course, I want you to know that I am here to help and support you as needed. You can call me, email me, or visit me in my office. I do not have set office hours but I am happy to schedule a time to meet with you.

I am excited to be teaching this course. I was exposed to epidemiology while in veterinary school but didn't become excited about it until I was in practice and found myself dealing with population medicine on a daily basis. With my new-found interest, I began learning more about epidemiology and integrating it into my work. I am currently board certified in epidemiology by the American College of Veterinary Preventive Medicine.

You can also read my biography at http://www.k-state.edu/media/mediaguide/bios/larsonbio.html

Objective

Students completing the course will possess a firm understanding of the vocabulary and principles of epidemiology. They will be familiar with the strengths and limitations of randomized control trials and observational study designs and how information gained from these study types should be evaluated. They will be able to evaluate raw data and published studies in order to propose reasonable next steps in the control of disease and other conditions of interest in populations.

Learning Objectives

Students will be able to:

- Properly calculate and use measures of disease, injuries, and death in human populations (e.g., prevalence, incidence, relative risk, attributable risk, population attributable risk, etc.) to describe problem magnitude; and to investigate associations to such consideration as age, gender/sex, race, occupation, social characteristics, diet, and environment.
- Draw appropriate inferences from epidemiologic data, and identify the data's strengths and limitations.
- Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiological data
- Demonstrate an understanding of how epidemiology is interrelated with other areas of public health and clinical care
- Explain the properties and applications of diagnostic methods and tests and how to apply these principles in medical decisions-making
- Encourage continued interest in epidemiology, and the use of epidemiologic principles to solve real-world, individual- and population-based health issues

The Online Course Approach

This course will be taught fully online. You are expected to communicate well with your colleagues and peers. You will submit assignments electronically.

Some course content will be delivered using multimedia (audio and video) technology. Some of the course materials will be downloadable as PowerPoint slideshows, Adobe Portable Document Format (.pdf) files, and MS Word (.doc) files. These do not generally require special purchases but may require free downloads.

A variety of practice-related discussion questions serve as a basis for learner participation in real-world epidemiology scenarios. The various components of the course aim to stimulate interactions among learners and with the instructor around important problems and issues facing public health.

Course Format

The class is divided into 15 one-week Modules. Each module consists of:

- **Required readings** from the textbook and/or assigned articles
- **PowerPoint lecture.** Students should read the required readings, and then watch the PowerPoint presentations for that module. Transcripts of all audio are provided.
- **Lecture quizzes** are required after each lecture. These are short, open-book quizzes to test your understanding of the lectures. These quizzes are not timed. You may access the quizzes as many times as you want but you may only submit your answers one time. Lecture quizzes must be taken prior to the end of the module in which the quiz is offered.
- A **list of glossary terms** will be provided to the student. The students will define these terms throughout the course and may utilize this glossary of terms as a study guide for the tests. This glossary will be turned in the week of each test and will count toward the final grade.

Some modules also include:

- **Discussion questions** will be required in some modules. These questions are meant to be challenging and to stimulate discussion among the students. Students should participate in the class discussion by posting comments on the "Message Board" on the class website on K-State Online. Participation in the discussions will count toward the students' participation grade.
- **Assignments** will be required in some modules. These assignments are meant to test your understanding of the material and to help apply the material to real-life scenarios.
- **Reading of articles** will be required in some modules. Article content may be used in discussion questions, quizzes, and tests.
- **Tests.** The course contains three tests. The first two tests are not cumulative; however, some material may build on earlier material that resurfaces throughout the course. The final exam will consist of 2/3 new material, 1/3 cumulative material. Tests will consist of two parts. The first part is multiple choice, open-book, and timed. Because it is timed, students should study and be well-prepared prior to starting the test. There will not be enough time for students to find all the answers if you are not prepared. The second portion of the test will be short answer, essay, or problems. These are open-book and are not timed. All students are expected to do their own work without consulting other students or individuals. All questions should be directed to the instructor. This portion of the test will be turned in to the instructor through the dropbox on the K-State Online class page. Both portions of the test will be due by midnight of the end of the module.

Course Schedule:

Module	Reading and Other Assignments	Objectives
1. Introduction to Epidemiology August 25, 2014	Reading: Gordis Chapt 1 Articles: • Winkelstein – Interface of epidemiology and history • Last – Epidemiology: The basic, clinical, essential science	• Basic concepts • History • Disease triad: host/agent/environment
2. Introduction to Disease transmission September 1, 2014	Reading: Gordis Chapt 2	• Dynamics of disease transmission
3. Measuring the occurrence of disease September 8, 2014	Reading: Gordis Chapt 3 **Discussion Question 1**	• Rates, Risk and Ratios • Incidence and prevalence • Surveillance introduction • Quality of life
4. Measuring the occurrence of mortality; and diagnostic/screening tests September 15, 2014	Reading: Gordis Chapt 4 and 5 **Assignment 1**	• Measuring mortality • Test validity & reliability • Test sensitivity & specificity • Predictive Value • Effect of prevalence
5. Natural history of disease and Prognosis September 22, 2014	Reading: Gordis Chapt 6 Articles: • Frank & Mustard - The Determinants of Health from a Historical Perspective • Mustard & Frank - The Determinants of Population Health: A Critical Assessment (first 10 pages)	• Natural history of disease • Prognosis • Life tables • Survival data
6. Intervention studies September 29, 2014	Reading: Gordis Chapt 7 & 8 **Test #1 – Modules 1-5**	• Quantitative methods and Introduction to study designs • Randomized designs • Non-randomized designs • Analysis interpretation • Strengths and weaknesses
7. Hypothesis testing and statistics October 6, 2014	Reading: • Introduction to the Scientific Method • Statistics at Square One: Study design and choosing a statistical test	• Variability in “normal” and “disease” • Sample size • Hypothesis testing and p-values • Statistical associations
8. Cohort studies October 13, 2014	Reading: Gordis Chapt 9 **Discussion Question 2**	• Design and types of cohort studies • Analysis and interpretation • Sources of bias • Strengths and weaknesses

Module	Reading and Other Assignments	Objectives
9. Case-Control studies October 20, 2014	Reading: Gordis Chapt 10 (up to Cross-Sectional Studies) **Assignment 2**	• Design and types of case-control studies • Analysis and interpretation • Sources of bias • Strengths and weaknesses
10. Descriptive studies October 27, 2014	Reading: Gordis Chapt 10 (pp. 195-198) and Chpt 14 (pp. 228-230)	• Cross-sectional studies • Case-series • Ecological designs • Analysis and interpretation • Sources of bias • Strengths and weaknesses
11. Risk for disease November 3, 2014	Reading: Gordis Chapt 11, 12 & 13 **Test #2 – Modules 6-10**	• Absolute and relative risk • Relative odds (odds ratio) • Attributable risk • Attributable vs. Relative risk
12. Association and causation November 10, 2013	Reading: Gordis Chapt 14 (Chapt 16 supplemental)	• True associations • Evidence of causation • Genetics and Environment
13. Bias, Confounding, and Interaction November 17, 2014	Reading: Gordis Chapt 15 • Sackett (1979) article • Berg (2007) article **Discussion Question 3**	• Bias, confounding, and interaction
Week of November 24, 2014 – Fall Break		
14. Evidence-based medicine/public health December 1, 2014	Reading: • EBM: Fifteen years later • EBM: Commentary on common criticisms • BMJ 1997 Systematic Reviews • Evidence Based Medicine • Creating a Search **Assignment 3**	• Levels of evi**d**ence • Systematic reviews • Critical appraisal of literature
15. Public policy, ethical and practical issues December 8, 2014	Reading: Gordis Chapt 19 & 20	• Issues in prevention and health promotion • Risk assessment outcomes • Ethical conduct of research • Practical considerations in research
Finals Week (Dec. 15-19, 2014)	**Test #3 – Modules 11-15 & comprehensive**	

Required Text: Gordis. Epidemiology. 4th edition. Philadelphia, PA: Saunders, 2009. ISBN 9781416040026.

Minimum Computer Requirements

- Desktop or Laptop with Dual-core processor or better
- Operating System: Windows XP – Service Pack 3 (or newer), Vista – Service Pack 2 (or newer) or Mac OS X 10.5 (or newer) operating system
- Processor (CPU): 1 GHz Pentium III or Athlon or newer; or 1 GHz Intel or newer for Macs
- Monitor: 1024x768 resolution or higher
- Video card:
  - Windows XP: NVIDIA GeForce 6600 or newer, or ATI Radeon 8500, 9250 or newer, or Intel 945 chipset
  - Windows Vista: NVIDIA GeForce 6600 or newer, or ATI Radeon 9500 or newer, or Intel 945 chipset
  - Mac: ATI Radeon 9200 and above, or ATI Radeon X Series, or NVIDIA GeForce 2, GeForce 4
- Memory (RAM): 1 gigabyte or more
- Ethernet (100 Mbps) or wireless (802.11 b/g) internet connection
- 80 gigbyte or larger hard drive
- Sound card and speakers

http://public.online.ksu.edu/support/requirements/

GRADING:

Grades will be based upon performance on class assignments, quizzes, examinations, and participation. Notice that testing is only one method of evaluation. Therefore, to perform well in this course, you must perform well in all aspects of this course. I believe that this method of evaluation will improve your learning of the course material. It will also help you evaluate your own knowledge of the material prior to taking examinations. All grades will be posted on K-State Online.

The GRADING SCALE is:

A = 90.0 - 100%
B = 80.0 – 89.9%
C = 70.0 – 79.9%
D = 60.0 – 69.9%
F = < 60%

Portions of the overall grade will come from exams, quizzes, and participation. It is broken down as follows:

Exams	40%
Quizzes	20%
Assignments	20%
Participation/Discussion	15%
Glossary Terms	5%

If you feel that grading errors* were made on exams or other material, please see the Instructor(s) ***within one week*** after the examination is returned. (*errors in exam grading are not likely as we will use an automated system. *Potential problems in your interpretation of materials or their clarity will be handled on a class-wide basis*).

Class Policies

Academic Honesty: Kansas State University has an Honor & Integrity System based on personal integrity which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor & Integrity System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning.

A component vital to the Honor & Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, *whether or not* it is stated: **"On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."**

The default in this class is that ALL work will be accomplished individually, UNLESS my permission is given in advance of an assignment/quiz/exam/take-home exam/final. If you are in doubt, please ask.

A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For more information, visit the Honor & Integrity System home web page at: http://www.ksu.edu/honor

Assignment Policy: All assignments, including quizzes and tests, are due *Sunday night at 11:59 PM Central Time*. Quizzes and tests will be automatically submitted to me. Turn other assignments in using the Dropbox in the module the assignment is due in. For example, for Assignment 1 that is due during Module 4, turn in the Assignment in the Dropbox in Module 4. I will not accept work emailed to me unless you have made prior arrangements with me to do so. Name your assignment with your last name followed by the assignment name as it appears on the schedule. For example, if your name is John Doe and you are turning in an assignment referred to as “Assignment 1”, name it “Doe Assignment 1”.

Late Work Policy: All work is expected to be turned in on time. There will be a **one letter grade reduction** in your score for each day any assignment is turned in late. No grace period will be given unless extenuating circumstances arise that are pre-approved by the instructor. Contact the instructor as early as possible if you need to request an extension for an assignment.

Technical Failure Policy: Because this is an online course, we rely on technology for the course to run smoothly. I understand that students may have occasional technological problems that prevent them from turning in work on time. In case of a technology failure that prevents you from submitting work by the deadline, you must email me or call me at 785-532-4257 as soon as possible. Situations will be handled on a case-by-case basis but

minimal extra time will be allowed for you to submit assignments with no penalty. However, you should do everything possible to complete work by the deadline. For example, if your computer or internet is not working you should find a different computer to use such as one at your public library.

If you have IT question you may contact the IT Help Desk. They are accessible online for live chats on their website at http://public.online.k-state.edu/support/ . You may email them at helpdesk@k-state.edu. You may reach them by phone at (785) 532-7722 or (800) 865-6143 or in person at 214 Hale Library on the Manhattan Campus. Their hours are posted on their website.

Email Policy: Please feel free to email me with any questions or comments. Send your emails to rlarson@vet.k-state.edu. Since I get emails from students in different classes, please put your course name and number on the subject along with a brief description of the content of the email. Example:

Subject: DMP/MPH 754, Question about slide 5 in lecture 1-3

I will respond to your email as soon as possible. This will generally be within 24 hours. However, I occasionally travel for work and my response time may be as long as 48 hours.

Discussion Policy: There will be several mandatory class discussions in the Message Board on K-State Online. Everyone is expected to participate but not dominate the discussion. Be professional. You will not always agree with the other students but you are expected to always be respectful of all students.

When posting in the Message Board, use full sentences and proper grammar. We are not text messaging so do not use shortcuts. Type all words completely. Only use acronyms if they are widely understood and used in class notes or the textbook.

Remember that other students in the class may be different than you. Do not use slang or say things that may be misinterpreted or may be hurtful to other students. Limit the use of humor. It can be easily misunderstood.

Students With Disabilities: Kansas State University is dedicated to providing equal opportunity and access for every student. The staff of Student Access Center (SAC) provides a broad range of supportive services in an effort to ensure that the individual needs of each student are met. In addition, the staff functions as an advocate for students with disabilities on the K-State campus. Through active involvement with all areas of the University, the office is able to monitor conditions relevant to students with disabilities and to provide help with decisions affecting their quality of life.

The SAC office provides a wide range of accommodations and services for individuals who have disabilities. Accommodations will be made in response to the specific disability.

Kansas State University is committed to and is making every possible effort to ensure that all electronic and information technology developed, procured, maintained, or used by us is accessible to individuals with disabilities. If you cannot fully access the information on a

particular page, please contact SAC for assistance. Visit www.k-state.edu/accesscenter for more information about SAC.

Kansas State University offers for-credit distance courses, evening courses (Evening College) and intersession courses through the KSU Global Campus. Disability Support Services is responsible for arranging accommodations for Global Campus students enrolled in for-credit courses.

The following links provide more information on receiving accommodations for Global Campus courses:

- Arranging Accommodations for For-Credit DCE Courses
- Accommodation Letters for Distance Courses
- Proctors and Test Taking Accommodations

Any student with a disability who needs an accommodation or other assistance in this course should make an appointment to speak with me as soon as possible.

Privacy Policy: No student work will be shared outside of this course. Tests, quizzes, emails, and individual assignments are confidential between you and me. Discussions on the Message Board are shared with all students enrolled in the course. This course is password protected so no one outside of this course can read the Message Board. Do not share personal information that you do not want others to read on the Message Board. Do not share your K-State Online password with anyone. If there is any original student work that I wish to share with future classes, I will ask permission from the student who authored the work. The student is not obligated to share the work, and his/her agreement or refusal to share the work will in no way affect his/her grade in the course.

I also follow K-State's FERPA guidelines regarding the protection and integrity of student records. More information may be found at www.k-state.edu/registrar/ferpa/ferpa.html

Course Copyright Policy ©: All the multimedia and other digital materials in this course are copyrighted and may not be used, copied or distributed outside the confines of this course without the legal, expressed and written permission of the copyright holder and Kansas State University. Some copyrighted materials may be used in this course based on limited copyright release, and the intellectual property rights of those materials revert to the original copyright holder. Any Web links used in this course do not indicate endorsement of the contents in those sites.

Disclaimer: Although this syllabus is expected to be accurate, it is subject to change at the coordinator's discretion

You may read all of Kansas State University's policies at www.k-state.edu/policies/

Syllabus 2015

Environmental Toxicology

College of Veterinary Medicine
Department of Diagnostic Medicine/Pathobiology

Term: Spring 2015
Number: DMP 806 / MPH 806
Credit Hours: 2
Format: Online

Instructors

Dr. Deon van der Merwe (Coordinator/Instructor)
dmerwe@vet.k-state.edu
http://www.vet.k-state.edu/education/dmp/faculty-staff/faculty/vandermerwe/

Dr. Annelise Nguyen (Instructor)
tnguyen@vet.k-state.edu
http://www.vet.k-state.edu/education/dmp/faculty-staff/faculty/nguyen/

Learning Objectives

Every student will be able to*:

- Describe genetic and physiological factors that affect health outcomes following exposure to environmental hazards
- Explain the general mechanisms of toxicity in eliciting an adverse response to various environmental exposures
- Describe current environmental risk assessment methods, and be able to specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human and animal health and safety

*These learning objectives are further defined and described in the course outline (pages 5-8).

Introduction

Environmental Toxicology, in its broadest sense, is the study of the adverse effects that chemicals in the environment have on human health, animal health, and ecological health. This course will provide you with an overview of toxicological principles, and of the practical application of toxicology in public health.

The literature on environmental toxicology is vast, and can be divided into several sub-disciplines. Although basic mastery of factual information and terminology, covering a wide range of toxicology sub-disciplines, is important, you are encouraged to go beyond the basics in some areas that are of particular interest to you. The final report should be used to reflect a deeper understanding of an area that interests you.

Instructor Expectations of Learning

Try to think independently and critically about the course content and the issues involved in environmental toxicology. There may be multiple reasonable and defendable viewpoints on environmental toxicology issues, and it is often helpful to investigate problems from a variety of perspectives. Discussions with instructors and fellow students are opportunities to gain a wider perspective, and are encouraged.

Students are expected to read/view online course materials pertaining to each module in advance of the assignment deadlines associated with each module. Interaction via email or any other available and appropriate means of discussion between students in the course, and between students and instructors, is encouraged. Please be responsive and respectful to fellow students and instructors. Written assignments must be submitted electronically via K-State Online, using a Microsoft Word file format (.doc or .docx). Please do not use a PDF format for assignments.

The course is organized into thematic sections. Sections will include graded assignments. Completed assignments must be submitted electronically by the deadline for each section, using the CourseFileDropBox folder in K-State Online. Contents of this folder will not be viewable by other students. Please name your assignment files using your capitalized last name, followed by underscore and section number, eg. SMITH_Section1.doc.

The final section of the course is dedicated to the development of a term project in the form of a report. Use this phase of the course to delve deeper into a topic that interests you and develop your own perspective on the issues involved. Be bold and have fun. Students will peer-review each other's projects. The results of the peer-review will form a component of the term project grade. A significant portion of the final course grade is dependent on the term project. To receive a satisfactory grade, the project must reflect the skills you acquired during the course.

The Online Course Approach

Recordings and other course materials content will be available through K-State Online. Text-based course materials will be downloadable as slideshows or text files in Adobe Portable Document Format (.pdf) and/or Microsoft Office (.doc/.docx/.ppt/.pptx) format. Viewing these do not generally require special purchases but may require free viewer downloads.

Required Text

IS Richards and M Bourgeois. Principles and Practice of Toxicology in Public Health, 2nd edition, Jones and Bartlett Learning, 2013.

- Summary slides can be found in the Supplementary Material folder in the K-State Online Course Content.

Computer Requirements

A high-end computer is not needed, but reliable internet access will be necessary. If you intend to purchase a computer and need advice on specifications, please visit: http://www.k-state.edu/its/buying/

Disabilities

Any student with a disability who needs assistance in this course should contact Disability Support Services (http://www.k-state.edu/dss/), and inform the instructors of arrangements that must be made to accommodate special needs.

Course Copyright Policy ©

All physical or electronic documents and media containing course materials may not be used, copied or distributed outside the confines of this course, without the legal, express and written permission of the copyright holder and Kansas State University. Some copyrighted materials may be used in this course based on limited copyright release, and the intellectual property rights of those materials revert to the original copyright holders. Web links used in this course do not indicate endorsement of the contents of those sites.

Plagiarism

Plagiarism is easily committed when working with electronic documents because it is easy and quick to copy and paste work produced by someone else. Representing such work as your own is plagiarism. Plagiarism is a serious offence that will not be tolerated.

Please refer to http://www.wpacouncil.org/node/9 , and http://owl.english.purdue.edu/owl/resource/589/1/ , for additional definitions and discussions of plagiarism, and for guidance regarding what will be judged to be plagiarism in this course. Plagiarism may result in failing an assignment, failing the course, academic probation, or expulsion.

University-wide Expectations for Conduct

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2.

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Grading scale

	Points
Section 1	100
Section 2	100
Section 3	100
Total	**300 points possible**

Symbol assignment: 90-100%: A; 75-89%: B; 65-74%: C; 55-64%: D; <55%: F

Course Outline and Completion Deadlines

(Please refer to the section contents in K-State Online for study materials)

Section 1: Overview and Basic Principles

Completion date: March 1

Goals

- Achieve familiarity with the basic concepts, terminology and language of environmental toxicology.
- Know and understand the general mechanisms of toxicity in eliciting an adverse response to various environmental exposures, including genetic and physiological factors that affect health outcomes following exposure to environmental hazards.

Module 1: Introduction to Environmental Toxicology, Chapters 1-5

- Toxicology and its roots as a science
- Chemical properties and information resources on hazardous chemicals
- Toxicity and the factors that modify toxic responses
- Biological poisons: plant and animal toxins
- Environmental pollutants and their fate

Module 2: Toxicology Principles, Chapters 6-11

- Dose and response
- Absorption of toxicants and models of disposition
- Distribution, storage, and elimination of toxicants
- Biotransformation
- Chemical-induced mutagenesis
- Chemicals and cancer

Module 3: Toxicology Practice, Chapters 19-21

- The practice of toxicology
- Regulatory considerations
- Toxicity testing

Module 4: Examples of Toxic Agents

Section 2: Risk Assessment

Completion date: April 5

Goals

- Know and understand the paradigms and assumptions associated with risk assessment.
- Know and describe current environmental risk assessment methods, and be able to specify approaches for assessing, preventing, and controlling environmental hazards that pose risks to human health and safety.

Module 1: The Risk Paradigm

- Defining toxicological risk
- Objective and subjective risk
- Regulatory responsibility
- The precautionary principle
- Risk quantification
- Introduction to models
- Model identifiability and inference range

Module 2: Risk Assessment and Risk Management

- Hazard identification
- Threshold dose-response
- Acceptable daily intake
- Linear dose-response
- The benchmark dose approach
- Exposure assessment
- Risk management

Section 3: Report

IMPORTANT: You must submit your report topic to Dr. van der Merwe by email on or before April 1st.

Completion date: May 3

Goals

- Practice the process of risk assessment and risk communication
- Assess the factors that affect the health of a community

Instructions

- Be concise. The report should be 10 pages or less (not including references), using a size 12 Calibri font. Do not copy original images, figures, or tables from publications. Create your own tables and figures to support your writing. Please avoid plagiarism by writing the report in your own words.
- Site all references in the text using the first author's last name and publication year, using this form: (Smith 2014). List references at the end of the report alphabetically, sorted by the first author's last name. Follow this format:
    - Black, R.M., Clarke, R.J., Read, R.W., Reid, M.T.J. (1994). Application of gas chromatography–mass spectrometry and gas chromatography–tandem mass spectrometry to the analysis of chemical warfare samples, found to contain residues of the nerve agent sarin, sulphur mustard and their degradation products. J. Chromatogr. 662: 301–21.
    - Cottingham, K. (2003). Ion mobility spectrometry rediscovered. Anal. Chem. 75: 435A–439A.
    - Fittch, J.P., Raber, E., Imbro, D.R. (2003). Technology challenge in responding to biological and chemical attacks in the civilian sector. Science 302: 1350–4.
    - Grate, J.W. (2000). Acoustic wave microsensor arrays for vapor sensing. Chem. Rev. 100: 2627–48.
    - Guerrieri, A., Monaci, L., Quinto, M., Palmesano, F. (2005). A disposable amperometric biosensor for rapid screening of anticholinesterase activity in soil extracts. Analyst 127: 5–7.
- Choose an environmental pollutant that is relevant to you in your work, or that is of personal interest to you. However, **it must be a chemical for which you are able to find dose-response data** that you can use for risk calculations. Describe its origins, its physical-chemical characteristics, and why it is of concern. **Prepare a toxicological risk assessment comparing two realistic exposure scenarios, one in a typical first world, resource rich society (eg. the United States), and another in a typical third world, impoverished society (eg. Somalia).** Please include all steps that are part of a typical risk assessment, including calculations of an Acceptable Daily Intake (ADI) derived from a No Observable Adverse Effect Level (NOAEL), or an acceptable risk level of 1 additional cancer per million lifetime exposures in the case of carcinogens. Use appropriate safety factors. **Provide recommendations for actions that can be taken to mitigate the**

toxicological risk associated with the chemical, and consider the practical implications of different environments and societal resource levels in your recommendations.

- Use the grading guide on the next page to ensure that you comply with all the content requirements, and to self-assess the quality of your report.

Risk Assessment Report Grading Guide

Performance level	1	2	3	4	5	6	Score
Placing the problem in a proper context	Not enough information	Information marginal or in error		Information adequate		Information excellent; Risk assessment is optimally facillitated	
Scope, Objectives and hazard identification	Lack literature review or physical-chemical description	Marginal review of literature and physical-chemical description		Adequate review of literature and physical-chemical description		Literature review is integrated with physical-chemical properties and correctly interpreted	
Dose-response data	Dose-response data inadequately reviewed/reported	Dose-response data marginally reviewed/reported		Dose-response data adequately reviewed/reported		Dose-response data excellently reviewed/reported; Includes appropriate data models	
Exposure data/description	Unrealistic exposure scenario and link to dose-response	Realistic exposure scenario, but poorly integrated with dose-response		Realistic exposure scenario correctly integrated with dose-response		Exposure, internal dose and dose-response expertly integrated; Includes appropriate data models	
Risk characterization	Minimal or no description in ≥ central elements	Marginal description in 1-2 central elements		Adequate summary of risk, but not quantitative		Excellent, complete, and quantitative summary of risk	
Conclusions and recommendations	Conclusions make little sense and are not linked to practical recommendations	Conclusions make sense; Recommendations are only marginally appropriate		Conclusions and recommendations make sense and are practical		Conclusions and recommendations are appropriate *and* innovative	
						Total score out of 36	

SOCIAL AND BEHAVIORAL BASES OF PUBLIC HEALTH

MPH 818/KIN 818

Spring 2015

INSTRUCTOR: Dr. Mary McElroy
Office 206 AHEARN
TEL: 532-0711
Office Hours: by appointment
e-mail: mmcelro@ksu.edu

REQUIRED TEXT: There is NO required text this semester

Readings will be assigned and placed on KSOL

COURSE OVERVIEW

Public health is a multi-disciplinary field focused on reducing preventable morbidity and premature mortality, and promoting a higher quality of life in populations. Although biological, physical and medical care factors contribute to population health outcomes, this course will emphasize the relationships among health outcomes, health behaviors and social/political/environmental structures. This course focuses on social and behavioral science theories and frameworks as ways to understand public health problems and develop interventions to reduce these problems. This course is consciously broad and not intended to give students an in-depth understanding of any particular theories, specific practice models, or selected research methods; rather, the goal is to provide an appreciation of the many conceptual and methodological approaches in the social and behavioral sciences that can inform public health practice and research. By the end of the course students are expected to have developed a solid foundation in behavioral and social science theory, research, and interventions as they pertain to public health.

A social ecological framework forms the conceptual basis of this course focusing attention on multiple levels of factors: individual, interpersonal, organizational, community, and population. By organizing the course around this multi framework, we will gain an understanding of the importance of multiple levels of influence on health and the interactions among these levels.

KSU MPH CORE COMPETENCIES FOR SOCIAL AND BEHAVIORAL SCIENCES

1. Identify basic theories, concepts, and models from a range of social and behavioral disciplines that are used in public health research and practice
2. Identify the causes of social and behavioral factors that affect the health of individuals and

populations with specific emphasis on underserved populations
3. Describe the merits of social and behavioral science interventions and policies

COURSE STRUCTURE

The course will be broken down into 14 modules including a mid-term and final examination. Assignments will typically be made available starting Sunday of each week and due no later than the following Saturday evening. **All** assignments must be submitted to the appropriate file drop boxes by the deadline. I will open the weekly assignments earlier where possible and if students are interested. Examinations will be due on the designated dates although there is an extension for the mid-term to include Spring break for those who want to use it. **No late assignments will be accepted.**

Most modules will typically consist of the following parts:
a) Interactive Assignment
b)Health Indicator Group Activity
including Current Events Presentation/ Participation

COURSE REQUIREMENTS

The course will consist of the following

a. Interactive Assignments

Each module/week will provide an interactive assignment which will consist of such activities as reviewing a short video, reading through a power point lecture, reading and responding to posted articles posted on KSOL. Videos will usually be downloaded in real format so it is a good idea to have real player on your computer. Links or other forms of information to the online activities will be given so you can access the material directly and not through KSOL. Students are expected to view these materials and respond to the questions posted. Please make sure that you answer ALL of the questions and submit them to the appropriate file drop box by the deadline. **No late assignments will be accepted.**

b. Two Examinations:

There will be two written examinations to be completed. The exam format will be "open book" and will cover material from the lectures, reading assignments, interactive assignments and group discussions. Exams will consist of short answer, essay and application questions. All work must be completed independently. Collaboration with others is strictly prohibited. Make sure the questions along with the answers are posted to KSOL by the designated deadlines. **No late exams will be accepted.**

c. Health Indicator Group Discussions

Students will be assigned into small groups to examine closely how behavioral/social

frameworks inform a particular leading health indicator. Students will be assigned to one of the leading health indicators during the second week of class. The health indicator groups will continue to examine their designated health indicator throughout the semester. Group activities might include a) describing a theory/framework and applying it to the health indicator, b) gathering social epidemiological evidence related to the health indicator or c) applying something from other assignments.

Each health indicator group will also be expected to prepare and deliver a debate on one controversial current event topic in public health related to their health indicator. Each topic should be based on the group's health indicator and include the identification of a key current issue/problem in public health that can be argued from more than one perspective and is relevant to a behavioral or sociological topic discussed in this course. Your topic should include 1) a description of a recent public health event (date occurred within the last two years or so) 2) a description of why this event is important to public health 3) why this topic can be argued from two convincing perspectives. Students will be asked to include evidence to inform their positions. A good place to start to identify a topic might be to examine newspaper and/or Internet articles relating to your topic. At the end of your presentation you will need to ask the class to vote whether they agree with side A or side B. You need to obtain debate topic approval from Dr. McElroy. More procedural information will be given at a later date. Dates for presentation will be determined after groups are assigned. Here are some examples from previous classes:

Are cigarette taxes an effective and equitable strategy to curtail smoking?
Should vending machines be allowed in the public schools of Topeka, Kansas
Should Manhattan Kansas be allowed to ban certain breeds of dogs?
Should New York City be allowed to ban transfats?
The gardisol controversy in Texas: Should vaccination be required?
*Should the federal government withdraw funding from HIV Studies***?**
*Should Washington and Oregon be allowed to enact "right to die" legislation***?**
Did CNN provide a sound public health perspective to the crisis of Katrina
Are windmills in southwest Kansas in the best public health interest of Kansas
Do private companies have the right to fire employees who smoke or who are overweight?
Does Obamacare legislation provide adequate health care coveraqe for young adults?

Note: Several successful presentations from previous classes will be posted on KSOL under the current events folder to give you an idea of what is expected.

d. Review Research Paper

Each student is expected to complete a brief review paper on a topic of one's choosing. Topics must include a social or behavioral principle discussed in class. Each review paper should examine 10 relevant data-based research articles, that is published in research journals. The paper should identify a research question, briefly review the 10 research articles and evaluate how the research articles address the research question. You may choose a topic which fits into your health indicator group but you do not have to do so. You will be asked to submit progress reports during the semester so your topic, research question and selected research articles can be approved prior to commencing your write-up.

e. Class Discussion Board This course will include virtual discussion of selected topics. The class discussion board includes the entire class and is therefore different from the smaller health indicator group discussions which are limited to four or five people. The class discussion board will be used to discuss timely issues and as a source of feedback information regarding class debates. Everyone is expected to participate fully in the discussion board, meaning well-informed posts, when the discussion assignments are posted.

Summary of Course Requirements

10 Interactive Assignments	36 points
Mid-Term Examination	15 points
Final Examination	15 points
Health Indicator Group Activity Including Current Event Presentation/Participation	16 points
Review Research Paper	12 points
Class Discussion Board Participation	6 points

Please note: Students must complete ALL assignments in order to receive a passing grade.

CLASS SCHEDULE
(Topics/Assignments Subject to Change)

Introduction January 18th-24th
Main Topic: Introduction to the Course
Introduction to the Requirements of the Course
Class Confirmation (Due by January 24th)

Module 1 January 25th-31st
Main Topic: Introduction of the Social and Behavioral Principles of Public Health
Leading Health Indicators
Historical Framework of Public Health
Individual vs. Social Responsibility for Health
Social Determinants of Health
Module 1 Assignments **(Due January 31st)**
Interactive Assignment # 1
Health Indicator Group Activity (Individual Assignment)

Module 2 February 1st-7th
Main Topic: Introduction to Multi-Level Models/Social Ecological Frameworks
Why a Social Ecological Approach
Individual vs. Social Responsibility
Module 2 Assignments **(Due by February 7th)**
Interactive Assignment # 2
Health Indicator Group Activity

Module 3 February 8th -14th
Main Topic: Individual Behavior Change Theory (Level 1)
Self-Efficacy Theory
Transtheoretical Model
Health Belief Model
Module 3 Assignments **(Due by February 14th)**
Interactive Assignment # 3
Health Indicator Group Activity

Module 4 February 15th-21st
Main Topic: Behavior Change Theory (Social Cognitive Theory) (Level 1 and Level 2)
Module 4 Assignments **(Due by February 21st)**
Interactive Assignment # 4
Health Indicator Group Activity

Module 5 February 22nd-28th
Main Topic: Interpersonal Systems and Social Support (Level 2)
The Family
Peer Groups
Module 5 Assignments **(Due by February 28th)**
Interactive Assignment # 5
Health Indicator Group Activity

Module 6 March 1-7th
Main Topic: Public Health and the Community Interventions (Level 4)
Social Capital and Public Policy Advocacy
Community Building /Community Capacity
Social Marketing
Community Interventions
Module 6 Assignments **(Due by March 7th)**
Interactive Assignment # 6
Health Indicator Group Activity

Module 7
Mid-term Examination March 8th-14th
Mid-term Examination due by Saturday 14th For individuals who would like to use Spring Break to complete the exam papers will be accepted until March 21st

Spring Break March 15th -21st
No Class/No Assignments

Module 8 March 22nd-28th
Main Topic: Social Structural Factors and Health (Level 5)
Social Class
Social Gradient of Health
Health Inequality
Module 8 Assignments **(Due by March 28th)**
Interactive Assignment # 8
Health Indicator Group Activity

Module 9 March 29th-April 4th
Main Topic: Race, Ethnicity and Health Inequities (Level 5)
Health Equity Framework
Hispanic Health Paradox
Discrimination
Module 9 Assignments (**Due by April 4th)**
Interactive Assignment # 9
Health Indicator Group Activity

Week 10/Module 10 April 5th –April 11th

Main Topic: Main Topic: Animal Human Bond: Behavioral and Social Perspectives
Main Topic: Animals and human health
Issues in Animal/Human Interactions
Module 10 Assignments (**Due by April 11th)**
Interactive Assignment # 11
Group Debates (Tentative)
Health Indicator Group Activity

Week 11/Module 11 April 12th-18th
Main Topic: The Future of Public Health/Healthy People 2020
Module 11 Assignments **(Due by April 18th)**
Interactive Assignment # 11
Group Debates (Tentative)
Health Indicator Group Activity

Module 12 April 19th-25th
Module 12 Assignments **(None)**
Group Debates (Tentative)
Health Indicator Group Activity

Module13 April 26th-May2nd
Module 13 Assignments **(None)**
Group Debates (Debates)
Health Indicator Group Activity
Review Research Paper (Due May 2nd)

Module 14 May 3rd-9th
Final Examination (Due no later than Saturday May 9th)

Please note the following:
Statement Regarding Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on campus, off campus, and via distance learning. The honor system website can be reached via the following URL: www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated" On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Statement for Academic Accommodations for Students with Disabilities
Any student with a disability who needs an accommodation or other assistance in this course should make an appointment to speak with me as soon as possible."

Statement Defining Expectations for Classroom Conduct
All students activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

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DMP-854/MPH-854: Intermediate Epidemiology
Spring, 2015

Course Coordinator:

Dr. Mike Sanderson, 337 Coles Hall
Email: sandersn@vet.k-state.edu Tel: 532-4264

Lab and Discussion schedule:
4:30 – 6:00 p.m. on Tuesday - attendance required
Room 343, Coles Hall, College of Veterinary Medicine

Learning Objectives:
1. Utilize the tools of Epidemiology in understanding methods to assess association and support causal relationships including:
2. Properly calculate and use measures of morbidity and mortality in populations (e.g., prevalence, incidence, relative risk, attributable risk, population attributable risk, etc.)
3. Describe problem magnitude; using measures of association accounting for considerations such as age, sex, race, breed, production type, occupation, diet, and environment.
4. Draw appropriate inferences from epidemiologic data, and identify the data's strengths and limitations accounting for the potential for bias and confounding based on study design and implementation.
5. Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiological data

Lecture Schedule:
Most lectures will be offered over K-State on-line. As a registered member of the class you may log on and view the lectures at your convenience. Assigned lectures and discussion assignments must be completed prior to the discussion or lab period.

Since a previous epidemiology class and introductory statistics is a pre-requisite for this class, basic knowledge of epidemiology and statistics is assumed. Please plan on reviewing basic concepts as necessary on your own.

Course Grading:
The course will be graded based on:
1. 3 exams (problem sets, short answer/essay and critical evaluation of Research/Methods papers), each weighted equally and worth 75% of your grade. All exams are cumulative. Each exam will focus on the primary lectures covered but knowledge/mastery of the previous material will be required for success. The exams are open book/open note but are to be done individually. No questions or discussion with other students or professors outside of the course.
2. Weekly discussion assignments over the content of the lectures assigned for that week will count for 15% of your grade.
3. Class attendance, participation in discussion will account for the remaining 10% of your grade.

Discussion assignments are to be completed prior to class and will be due at 8 AM Tuesday before class. The assignment will be covered and expanded upon during the class discussion time. Please turn one copy in to me and keep an additional copy for you to refer to during the discussion. The Discussion problems are meant to apply the material in the lectures, and identify questions for discussion and clarification. Feel free to work in groups on these problems if that facilitates your learning. Completion of the assignments and participation in the discussion is crucial for gaining understanding of the material.

All Discussion assignments and exams must be typed for submission.

Email completed discussion problems to Dr Sanderson by 8AM on Tuesday morning before each class.
Bring a copy of discussion problems to class on Tuesday to refer to.
Upload an electronic version of the exam to KSOL by the due date and time.

Assignments and tests handed in late will be penalized 10% for each day that the assignment is late.

The short version of the multi-paragraph ethical disclaimer statement is – be professional, mature, and don't cheat.

It is both professional and courteous to come to class on time. Entering the classroom after the beginning of class is disruptive to your classmates. **All cellular telephones and mobile pagers must be turned off during class time. Text messaging via cellphone, blackberry (or, similar device) during class or laboratory is unacceptable behavior (as well as rude and discourteous to the instructor and your classmates). Spending time playing computer games or e-mailing or chatting with your friends while in the scheduled class time is likewise rude and unacceptable behavior.**
Scholastic dishonesty, in any form, will not be tolerated. This means no cheating of any kind. Scholastic dishonesty includes, but is not limited to, looking at the exam sheet of a classmate (with or without their permission), and providing information to (or seeking information from) classmates for take-home examinations.

Grades will be assigned as follows:

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Recommended text (no text required)
DVM graduate students and DVM/MPH students

Dohoo, I, Martin S, and Stryhn H. Veterinary Epidemiologic Research 2nd Edition, VER Inc Charlottetown, Canada 2010

MPH students

Lilienfeld, DE, Stolley, PD. Foundations of Epidemiology. Oxford University Press, 1994.
or
Vetter, N. Matthews, I. Epidemiology and Public Health Medicine. Churchill Livingstone. 1999 (I have not fully read this book so am not sure how good it is)

Reference texts:
The following useful epidemiology texts are on reserve in the Veterinary Medicine Library:

1) Martin, S. W., Meek, A.H., and Willberg, P. Veterinary Epidemiology: Principles and Methods. Iowa State Press, Ames, Iowa, 1987.
2) Sackett, D.L., Haynes, R.B., Tugwell, P. Clinical Epidemiology: A basic science for clinical medicine. 2nd Edition. Little, Brown, and Co., Boston, MA. 1991.
3) Smith, R.D. Veterinary Clinical Epidemiology: A problem oriented approach. 2nd Edition. CRC Press, Boca Raton, FL. 1995.
4) Thrusfield, M. Veterinary Epidemiology. 2nd Edition. Blackwell Science, Inc., Malden, MA. 1995.

Honor Code

Statement Regarding Academic Honesty

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The default in this class is that ALL work will be accomplished individually, UNLESS my permission is given in advance of an assignment/quiz/exam/take-home exam/final. If you are in doubt, please ask.

Statements for Academic Accommodations for Students with Disabilities

"Any student with a disability who needs a classroom accommodation, access to technology or other academic assistance in this course should contact Disability Support Services (dss@k-state.edu) and/or the instructor. DSS serves students with a wide range of disabilities including, but not limited to, physical disabilities, sensory impairments, learning disabilities, attention deficit disorder, depression, and anxiety."

Statement Defining Expectations for Classroom Conduct

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Course outline:

Lab or Discussion Date	Lectures to Complete Prior to Lab/Discussion	Discussion Questions/Problems or Paper Posted		Exam Posted 6PM	Exam Due 12 Midnight	Material Included through		Assignment
1/20/15	Initial meeting & Intro lecture							
1/27/15	Descriptive Epi, Patterns of Disease	1/21/15						Discussion Questions
2/3/15	Reasearch & Inference, Hypothesis Generation & testing Intro to Study Design 1&2	1/28/15						Discussion Questions
2/10/15	Scientific Inference & causality	2/4/15						Causal Paper Evaluation
2/17/15	Diagnostic Testing	2/11/15						Diagnostic Tests
2/24/15	Sampling and Sample Size	2/18/15	Exam 1	2/24/15	2/27/15	2/24/15		Sample Size
3/3/15	Measuring Disease Frequency	2/25/15						Disease Frequency
3/10/15	Measures of Association	3/4/15						Measures of Association
3/17/15	Spring Break							
3/24/15	Bias and Confounding	3/11/15						Bias & Confounding
3/31/15	Confounding & Effect Mod	3/25/15	Exam 2	3/31/15	4/3/15	3/31/15		Confounding & Effect Mod
4/7/15	Observational Study Design	4/1/15						Cross Sectional Paper Evaluation
4/14/15	(continuation of Obsv Studies)	4/8/15						Case Control Paper Evaluation
4/21/15	Clinical Trials	4/15/15						Cohort/Clin Trial Paper Evaluation
4/28/15	Herd Immunity and Disease transmission	4/22/15						Dz Modeling Paper
5/5/15	Surveillance, Outbreak Investigation	4/29/15	Exam 3	5/5/15	5/8/15	5/5/15		Surv & Dz Trans