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Nursing Syllabi Fall 2018

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2018

### 864-02 Epidemiologic Methods in Health Care Services

Betsy List  
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**XAVIER UNIVERSITY**  
**COLLEGE OF PROFESSIONAL SCIENCES**  
**SCHOOL OF NURSING**

**NURS 864-02 Epidemiologic Methods in Health Care Services**  
**Syllabus and Calendar Fall 2018**

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**Instructor Information**

**Instructor:** Betsy List, PhD, MPH, RN | Assistant Professor

**Preferred method of contact:** email

**Email:** listb1@xavier.edu

**Office Telephone:** 513-745-3690

**Office:** Cohen Center, Room 121

**Office Hours:** Office hours are held weekly by appointment. Contact the instructor to schedule a meeting time.

**Course Information**

**Course Credit Hours:** 3 credit hours (45 theory hours)

**Prerequisites:** Graduate standing or permission of instructor, undergraduate statistics, and graduate research

**Course Meeting Time:** Tuesdays 4:00-6:30pm, Cohen Center 193

**Course Description**

Principles and biostatistical methods used in the study of the distribution and determinants of injury and disease through the interaction of environment and genetics in human populations (HP2020) are presented for use in the holistic development, implementation, and evaluation of primary, secondary and tertiary preventive and acute health care services in a variety of settings. Resources for epidemiological investigations within organizations and communities are introduced. Opportunities are provided to use the epidemiological and biostatistical methods of reasoning for determining causal inferences about the distribution and determinants of injury and disease (HP2020). Evidence-based innovative and evaluative health care delivery plans for clinical prevention and population health are developed using epidemiological and biostatistical data.

This course relates to scholarship and leadership and personal and professional development components of the school's mission.

**Course Objectives**

1. Examine basic principles and methods used in epidemiologic research.
2. Apply biostatistical techniques to the analysis of epidemiologic data related to individual, aggregate, and population health for the development, implementation and evaluation of health care services.

3. Examine and interpret common indices of population health.
4. Critique the theory behind screening programs and various interpretations of findings for the management of primary, secondary and tertiary clinical preventive services.
5. Evaluate epidemiologic natural history of diseases through appraisal of existing epidemiologic research literature and national data sources so as to suggest explanations and avoid pitfalls of epidemiologic inference for quality management of health care delivery from an epidemiologic perspective and an understanding of cultural diversity of human populations.
6. Develop a population-based or high-risk-based health care delivery service designed to alleviate a community, environmental, occupational and cultural/socioeconomic health related problem or organizational administrative concern, that involves evidence-based strategies to promote, maintain or restore health in a holistic perspective using epidemiologic principals and methods.

### **Related Essentials of Doctoral Education**

Primary	<u>Essential VII</u> : Clinical Prevention and Population Health for Improving the Nation’s Health (all)
Secondary	<u>Essential I</u> : Scientific Underpinnings for practice – ‘patterning of human behaviors in interaction with the environment’, ‘continuous interaction with their environments,’ ‘health care delivery.’ <u>Essential II</u> : Organizational and System Leadership for Quality Improvement and Systems Thinking – ‘assess risk,’ ‘cost effectiveness,’ ‘conceptualize new care delivery models.’ <u>Essential III</u> : Clinical Scholarship and Analytical Methods for Evidence-Based Practice – ‘use analytical methods to critically appraise existing literature,’ ‘design evidence-based interventions.’

### **Course Materials**

Gordis, L. *Epidemiology*. 5th ed. (2014) Philadelphia: Elsevier Saunders. (with Student Consult book access code)

Answers to review questions may be found at the end of the text and complete rationales for all answer options may be found online at [Student Consult](#). Instructions to register and activate your book are [online](#) and on the inside front cover of the text. If you purchase used textbooks, be aware that the activation code is limited to the first individual who redeems the code. Students are encouraged to inquire at the [Student Consult Support Center](#) or the University Bookstore prior to making decisions regarding their textbook purchase or rental.

American Psychological Association. (2009). *Publication manual of the American Psychological Association*, 6<sup>th</sup> edition. Washington, DC: Author.

APA (6<sup>th</sup> edition) style is required for all writing assignments in this course. The APA manual is the recommended resource on APA style.

Additional full-text research articles are linked in the Canvas course:

- Jaakkola, J. J. K., Hwang, B.-F., & Jaakkola, M. S. (2010). Home Dampness and Molds as Determinants of Allergic Rhinitis in Childhood: A 6-Year, Population-based Cohort Study. *American Journal of Epidemiology*, 172(4), 451–459. doi:10.1093/aje/kwq110
- Nielsen, N. O., Strøm, M., Boyd, H. A., Andersen, E. W., Wohlfahrt, J., Lundqvist, M., ... Melbye, M. (2013). Vitamin D status during pregnancy and the risk of subsequent postpartum depression: a case-control study. *Plos One*, 8(11), e80686–e80686. <https://doi.org/10.1371/journal.pone.0080686>
- Rodrigue, J. R., Fleishman, A., Fitzpatrick, S., & Boger, M. (2015). Organ donation video messaging in motor vehicle offices: results of a randomized trial. *Progress In Transplantation (Aliso Viejo, Calif.)*, 25(4), 332–338. doi:10.7182/pit2015166

### Technical Requirements

- Internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas through a supported Web browser with required plug-ins. [Click here for supported browsers](#)
- Check your computer against Xavier’s suggested minimum computer requirements. [Click here for minimum computer requirements](#)

### Technical Assistance

If you need technical assistance at any time during the course or to report a problem with Canvas, contact the HELP Desk at (513) 745-HELP/4357 or visit the [HELP Desk Web site](#), or contact Canvas at 855-778-9967.

### Teaching / Learning Methods

A variety of teaching methods and learning experiences are designed to actively engage students with the course material in and outside of the classroom. A combination of discussion meetings with some lecture, skill activity sessions, videos, practice problems, case studies, online learning modules, and cooperative problem-solving groups will be used.

### Evaluation Components

Assignments and quizzes	15%
Comprehensive Exam	25%
Health Care Delivery Project (3-part group assignment series)	50%
I: Epidemiology of the Health Problem	
II: Appraisal of Evidence on Best Practices	
III: Proposed Health Care Delivery Service Evaluation Plan (Oral Presentation)	5%
Collaboration and Participation	5%
	<hr/>
	100

## Grading Scale

100-94.....	A
93-90.....	A-
89-87.....	B+
86-83.....	B
82-80.....	B-
79-77.....	C+
76-73.....	C
72-70.....	C-
Below 70.....	F

## Assignments and Quizzes

Student learning outcomes are defined at the start of each Canvas module. Learning outcomes are statements of what you should be able to do after completing the module. Learning activities in each module are designed to assist you to achieve those learning outcomes, and students demonstrate their progress through completion of course assignments and quizzes. Due dates for assignments and quizzes are noted in the [Course Schedule](#). Assignments and quizzes are weighted 15% of the final course grade.

Module quizzes are completed online in Canvas. You will have two attempts at the quiz and the highest score will be retained in the grade book. Quiz question styles include multiple choice, short answer, and true/false formats.

[XU.Tutor](#) is a library tutorial series to help Xavier students succeed in writing and researching the literature. The XU-Tutor USE module is required for this class. The USE tutorial covers plagiarism and copyright and is designed to help students use and manage information appropriately, ethically, and legally. The tutorial will take approximately 30 minutes to complete. [Click here to access XU-Tutor USE](#). If you have completed the tutorial in a prior course and you have your completion certificate, you do not need to repeat the tutorial for this course; however, you must submit your completion certificate via Canvas. Students upload the completion certificate with their name and quiz results to Canvas under the assignment: XU.tutor Online Tutorial.

Complete assignment descriptions and grading rubrics can be found in Canvas.

## Comprehensive Exam

The comprehensive in-class exam will cover material from assigned readings and class activities. Students should review module learning outcomes and the study questions at the end of each chapter to prepare for the exam. The exam will consist of multiple choice and fill-in-the-blank style questions. Students may bring a calculator to class and refer to a worksheet of formulas for biostatistical calculations. (Cell phone calculators are not permitted during the exam.) The exam is weighted 25% of the final course grade.

## Health Care Delivery Project

The Health Care Delivery Project is a 3-part series of group assignments. Students will be placed with a team of two to three peers to complete the project series. Teams will select a population health problem or issue of interest to the group. Group assignments in the project series include:

- I. Epidemiology of the Health Problem (a two-page paper)
- II. Appraisal of Evidence on Best Practices (literature review matrix)
- III. Proposed Health Care Delivery Service Evaluation Plan (oral presentation)

Assignments in the project series are completed sequentially. The project is weighted 50% of the final course grade. The first assignment in the project series requires students to describe the epidemiology of their selected health problem or issue. In the second assignment, students appraise the evidence for health care delivery service interventions in order to identify best practices for primary, secondary, or tertiary prevention. The third assignment requires students to develop a plan to evaluate the effectiveness of their proposed health care delivery service for prevention or control of the health problem or issue in a specific target population. The plan is presented in the form of an oral presentation weighted 5% of the final course grade.

Assignments in the project series receive a group grade. Each student contributes to the success of the team and is expected to play an active role in each group assignment. Students will evaluate the performance of peers in their group by completing a peer evaluation at the end of the semester.

Detailed instructions and grading rubrics for each assignment in the project series can be found under your Canvas Groups tab on Canvas. Click on the Canvas Groups tab in the menu on the left of your computer screen to view your assigned project team and group space.

### Collaboration and Participation

Team building, professional behaviors, and project management are expected of all students in project groups. Collaboration and participation in class, discussion, and project teams is weighted 5% of the final course grade.

#### Collaboration and Participation Rubric

Criteria	Description	Possible Points
Collaboration	Collaboration as evaluated by peers; points reflect an average peer evaluation score: 4=25 points, 3=20 points, 2=17 points, 1=15 points	25
Participation	Participation is evident in class, discussion, and team assignments	25

## **Course Policies/Guidelines**

### **Attendance Policy**

Reasonable attendance at all class meetings is expected. If a student is unable to attend a class, the responsibility of missed class content is the sole responsibility of the student. Students must contact the instructor prior to class to be excused from any in-class learning activities. Up to two excused absences are permitted.

### **Late Assignment Policy**

All assignments and quizzes should be submitted via Canvas by the due date and time specified. Requests for extensions should be made at least 48 hours in advance of the due date. Late assignments will receive a 10% per day penalty for up to 4 days after which the assignment will not be accepted for credit.

### **Plagiarism**

Assignment submissions should be the student's own original work for this course. Use APA style (6<sup>th</sup> edition) guidelines to paraphrase or quote the work of previous authors. Turnitin is a tool used to check for plagiarism and is set for selected assignments in this course. Plagiarism may be intentional or unintentional and includes self-plagiarism or the submission of previous academic work in whole or in part without acknowledgement. Plagiarism, in any form, will not be tolerated. Students should be familiar with the Xavier University Academic Honesty Policy (below) and penalties for violations of the policy. Students may revise and resubmit assignments based upon Turnitin Similarity Scores up until the assignment due date; plan ahead to allow enough time to edit the submission prior to the due date/time if needed.

## **Academic Support**

### **Learning Assistance Center**

The [Learning Assistance Center \(LAC\)](#) provides support services to facilitate learning. The LAC has two main purposes: tutoring and disability services. The tutoring services include subject specific tutoring, drop-in sessions, study skills assistance, and Supplemental Instruction (SI). For students with documented disabilities, services include accommodations such as extended time on exams, reduced distraction testing environment, note-taking assistance, and assistive technology. Services are provided in a positive and encouraging environment, which promotes appreciation for diversity and *cura personalis*. Students can contact the LAC at (513) 745-3280 to set up an appointment: <https://www.xavier.edu/academic-support/index>

### **Writing Center**

The [Writing Center](#) offers free one-on-one tutoring on writing assignments for all Xavier students. Students can contact the Center at (513) 745-2875 to set up an appointment. Sessions can be conducted in multiple ways, including discussions by phone and by email at [writingcenter@xavier.edu](mailto:writingcenter@xavier.edu). The Writing Center is located in the Conaton Learning Commons room 400. <http://www.xavier.edu/writingcenter/>

## **Library Services**

As a student at Xavier University you have access to the Library Collections and Services. [The Library databases](#) can be accessed from off campus using your Xavier login.

There are many ways to get [help from a Librarian](#) including chat, text, and email.

## **University Policies**

### **Academic Honesty Policy**

The pursuit of truth demands high standards of personal honesty. Academic and professional life requires a trust based upon integrity of the written and spoken word. Accordingly, violations of certain standards of ethical behavior will not be tolerated at Xavier University. These include theft, cheating, plagiarism, unauthorized assistance in assignments and tests, unauthorized copying of computer software, the falsification of results and material submitted in reports or admission and registration documents, and the falsification of any academic record including letters of recommendation. All work submitted for academic evaluation must be the student's own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited, as is the use of any work untruthfully submitted as one's own.

Penalties for violations of this policy may include, but are not limited to, one or more of the following: a zero for that assignment or test, an "F" in the course, and expulsion from Xavier. The Academic Dean of the college in which the student is enrolled is to be informed in writing of all acts of academic dishonesty, although the faculty member has authority to assign the grade for the assignment, test, or course. If disputes regarding the applicability or enforcement of this policy arise, the student, faculty member and department chair should attempt to resolve the issue. If this is unsatisfactory, the Academic Dean of the college will rule on the matter. As a final appeal, the Provost will call a committee of tenured faculty for the purpose of making a final determination.

### **Copyright Policy**

Copyright laws and fair use policies protect the rights of those who have produced the material. To help you familiarize yourself with copyright and fair use policies, the University encourages you to visit the [library copyright Web page](#). You can also [request copyright help](#) from the library if you have specific questions.

Xavier University course sites contain copyrights held by the instructor, other individuals or institutions. Such material is used for educational purposes in accord with copyright law and/or with permission given by the owners of the original material. You may download one copy of the materials on any single computer for non-commercial, personal, or educational purposes only, provided that you (1) do not modify it, (2) use it only for the duration of this course, and (3) include both this notice and any copyright notice originally included with the material. Beyond this use, no material from the course web site may be copied, reproduced, re-published, uploaded, posted, transmitted, or distributed in any way without the permission of the original copyright holder. The instructor assumes no responsibility for individuals who improperly use

copyrighted material placed on the web site.

### Students with Disabilities

Any student who feels he/she may need an accommodation based on the impact of a documented disability should notify the course instructor and contact Cassandra Jones in the Learning Assistance Center at 513-745-3280 or e-mail [jonesc20@xavier.edu](mailto:jonesc20@xavier.edu) to coordinate reasonable accommodations.

### Course Structure

Class meets every Tuesday except where noted in the schedule below. The course includes seven modules. Assigned readings and learning activities for each module are detailed under the Modules tab on Canvas. Students are expected to read the assigned chapters and attempt the chapter review questions prior to class. Assignment due dates are displayed in the table below, on the Canvas calendar, the Canvas Home page, and on Canvas Module pages. Unless otherwise specified, all assignments and activities are due by 11:59pm EST on the due date assigned. Online quizzes open the week before they are due.

### Course Schedule

#### Module 1: Epidemiologic Principles (8/20/18 through 9/2/18)

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
8/28	Assignment: XU.tutor Online Tutorial	Gordis: Chapter 1 Chapter 2 (Q # 1-5) Chapter 19
8/28	Group Discussion: Population Health Problems	
9/2	Quiz (online): Epidemiologic Principles	

#### Module 2: Population Health Indices (9/3/18 through 9/16/18)

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
9/4	Assignment: Navigating a Foodborne Outbreak	Gordis: Chapter 3 (Q # 1-7) Chapter 4 (Q # 1-6, 11-12)
9/11	Group Discussion: Epidemiology of the Health Problem	
9/16	Quiz (online): Population Health Indices	

#### Module 3: Screening and Prognosis (9/17/18 through 9/30/18)

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
9/23	Group Assignment: TurnItIn Draft - Epidemiology of the Health Problem	Gordis: Chapter 5 (Q # 1-5, 9-12) Chapter 18 (Q # 1-5, 8) Chapter 6 (Q # 1-8)
9/25	Skills Lab: Biostatistical Calculations	
9/30	Quiz (online): Screening and Prognosis	

**Module 4: Epidemiologic Approach to Intervention and Evaluation (10/1/18 - 10/14/18)**

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
10/2	Group Assignment: Epidemiology of the Health Problem	Gordis: Chapter 7 Chapter 8 (Q # 1-7) Chapter 17 (Q # 1-5)  Article by Rodrigue, Fleischman, Fitzpatrick, and Boger (2015)
10/9	Assignment: Study Designs for Evaluation of Interventions	
10/9	Assignment: Midterm Reflection	

**Module 5: Epidemiologic Methods for Identifying the Cause of Disease (10/15/18 - 10/21/18)**

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
10/16	Assignment: Potential for Bias in Observational Research Designs	Gordis: Chapter 9 (Q # 1-5) Chapter 10 (Q # 1-9)  Article by Nielsen et al. (2013)  Article by Jaakkola, Hwang, and Jaakkola (2010)

**Module 6: Estimating Risk (10/22/18 through 11/4/18)**

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
10/23	Group Discussion: Evidence for Prevention and Control	Gordis: Chapter 11 (Q # 1, 4, 8, 9) Chapter 12 (Q # 1-5) Chapter 13
10/30	Group Assignment: Appraisal of Evidence on Best Practices	
11/4	Quiz (online): Estimating Risk	

**Module 7: Causal Inference (11/5/18 through 12/7/18)**

<i>Due date</i>	<i>Assignment (or activity): title of assignment</i>	<i>Reading (Review Question Numbers)</i>
11/6	Discussion: Case Studies in Causal Inference	Gordis: Chapter 14 (Q # 1-5) Chapter 15 (Q # 1-8) Chapter 16 (Q # 1-5) Chapter 20
11/13	Group Discussion: Evaluation Plan	
11/18	Quiz (online): Causal Inference	
11/21	<i>Happy Thanksgiving!</i> (No class this week)	
11/27	Comprehensive Exam	
12/4	Group Assignment: Proposed Health Care Delivery Service Evaluation Plan (Oral Presentation)	
12/4	Assignment: Peer Evaluation	

**Note:** The schedule is subject to change in the event of extenuating circumstances. You are expected to check announcements regularly and adhere to the established course deadlines.