

Term Information

Effective Term Spring 2015
Previous Value Summer 2012

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

We are proposing to add this course as a General Education course under the category Social Science, Individuals and Groups. We have also removed the prerequisite for the course and removed some of the learning objectives that were focused on biostatistics. The course is now focused entirely on epidemiology. Finally, we have changed the target audience; previously graduate and professional students were listed (this was a mistake).

What is the rationale for the proposed change(s)?

This course will meet the learning objectives for this GE category. Having this added to the list of GE courses would give students an opportunity to learn more about public health.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

There are no programmatic implications associated with the change.

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Pub Hlth: Epidemiology
Fiscal Unit/Academic Org	College of Public Health - D2505
College/Academic Group	Public Health
Level/Career	Undergraduate
Course Number/Catalog	2410
Course Title	Introduction to Epidemiology
Transcript Abbreviation	Intro Epi
Course Description	Introduction to the study of public health; history, methods, applications, and issues in epidemiology.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	No
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus
<i>Previous Value</i>	<i>Columbus, Lima</i>

Prerequisites and Exclusions

Prerequisites/Corequisites

Previous Value

Prereq: Stat 1350 or 1450, or equiv, or permission of instructor.

Exclusions

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code

26.1309

Subsidy Level

Baccalaureate Course

Intended Rank

Freshman, Sophomore, Junior, Senior

Previous Value

Junior, Senior, Masters, Doctoral, Professional

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

General Education course:

Individual and Groups

The course is an elective (for this or other units) or is a service course for other units

Previous Value

Required for this unit's degrees, majors, and/or minors

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Summarize historical events in the field of epidemiology
- Explain the concept of the natural history of infectious and chronic diseases
- Summarize major causes of mortality and morbidity for developed and developing nations
- Summarize basic concepts in infectious disease epidemiology including the incubation period of microbes, attack rate, ring vaccination, acquired and innate herd immunity, and portals of entry and exit into the human system
- Summarize basic concepts in chronic disease epidemiology including the empiric induction period, screening for antecedent conditions, risk factors and preventive factors, and selected concepts regarding diagnosis and treatment
- Summarize basic concepts of primary, secondary, and tertiary prevention
- Perform calculations of sensitivity, specificity, predictive value positive, and negative predictive value for a diagnostic test
- Differentiate between incidence and prevalence epidemiologic measures
- Use and apply basic methods of rate calculations for diseases and the importance of rate adjustments for age and other potential confounders
- Describe the basic features of epidemiologic investigations (case studies, surveillance studies, case control studies, cohort studies) and intervention studies (field studies and randomized clinical trials)

Previous Value

- Define and interpret relative risk and the odds ratio
- *Summarize historical events in the field of epidemiology*
- *Explain the concept of the natural history of infectious and chronic diseases*
- *Describe the basis of cause and effect*
- *Summarize major causes of mortality and morbidity for developed and developing nations*
- *Summarize basic concepts in infectious disease epidemiology including the incubation period of microbes, attack rate, ring vaccination, acquired and innate herd immunity, and portals of entry and exit into the human system*
- *Summarize basic concepts in chronic disease epidemiology including the empiric induction period, screening for antecedent conditions, risk factors and preventive factors, and selected concepts regarding diagnosis and treatment*
- *Summarize basic concepts of primary, secondary, and tertiary prevention*
- *Perform calculations of sensitivity, specificity, predictive value positive, and negative predictive value for a diagnostic test*
- *Differentiate between incidence and prevalence epidemiologic measures*
- *Use and apply basic methods of rate calculations for diseases and the importance of rate adjustments for age and other potential confounders*
- *Assimilate basic information on the types of epidemiologic investigations: case studies, surveillance studies, case control studies, cohort studies, and intervention studies (field studies and randomized clinical trials)*
- *Identify sources of random and systematic error in scientific studies*
- *Summarize the basis of hypothesis testing and confidence intervals of epidemiologic estimates*
- *Define and interpret relative risk and the odds ratio*
- *Set up a life table and plot survival curves*
- *Summarize the concept of goodness of fit tests in epidemiologic studies*
- *Summarize fundamentals of conducting an epidemiologic investigation of an outbreak of disease in the population*
- *Apply the criteria of judgment for determination of cause and effect disease associations*

Content Topic List

- Historical events in the field of epidemiology
- Major causes of mortality and morbidity for developed and developing nations and the Epidemiologic Transition
- Basic concepts in infectious and chronic disease epidemiology including primary, secondary and tertiary prevention
- Calculation and interpretation of sensitivity, specificity, predictive value positive and predictive value negative for a diagnostic test
- Basic methods of rate calculations for diseases and the importance of rate adjustments for age and other potential confounders
- Basic information on the types of epidemiologic investigations (case studies, surveillance studies, case control studies, cohort studies, intervention studies (field studies and randomized clinical trials)
- Meaning and interpretation of the relative risk and the odds ratio in cohort and case control studies

Previous Value

- *Historical events in the field of epidemiology*
- *Major causes of mortality and morbidity for developed and developing nations and the Epidemiologic Transition*
- *Basic concepts in infectious and chronic disease epidemiology including primary, secondary and tertiary prevention*
- *Calculation and interpretation of sensitivity, specificity, predictive value positive and predictive value negative for a diagnostic test*
- *Basic methods of rate calculations for diseases and the importance of rate adjustments for age and other potential confounders*
- *Basic information on the types of epidemiologic investigations (case studies, surveillance studies, case control studies, cohort studies, intervention studies (field studies and randomized clinical trials)*
- *Sources of random and systematic error in scientific studies, hypothesis testing and confidence intervals of epidemiologic estimates*
- *Meaning and interpretation of the relative risk and the odds ratio in cohort and case control studies*
- *Life tables, survival curves and goodness of fit tests in epidemiologic studies*
- *Criteria of judgment for determination of cause and effect disease associations*

Attachments

- PUBHEPI 2410 syllabus.docx
(Syllabus. Owner: Ferketich, Amy Kathleen)
- GE CourseProposal_Introduction to Epidemiology.docx
(GEC Course Assessment Plan. Owner: Ferketich, Amy Kathleen)

Comments

- We have made the requested changes to the assessment plan document. *(by Ferketich, Amy Kathleen on 03/04/2014 05:18 PM)*
- See 2/13 e-mail to A. Ferketich. *(by Vankeerbergen, Bernadette Chantal on 02/13/2014 02:39 PM)*

COURSE CHANGE REQUEST
2410 - Status: PENDING

Last Updated: Bisesi, Michael Salvatore
03/05/2014

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Ferketich, Amy Kathleen	01/30/2014 03:08 PM	Submitted for Approval
Approved	Katz, Mira L.	01/30/2014 05:57 PM	Unit Approval
Approved	Bisesi, Michael Salvatore	01/31/2014 12:12 PM	College Approval
Revision Requested	Vankeerbergen, Bernadette Chantal	02/13/2014 02:39 PM	ASCCAO Approval
Submitted	Bisesi, Michael Salvatore	02/14/2014 08:39 AM	Submitted for Approval
Approved	Katz, Mira L.	02/14/2014 04:40 PM	Unit Approval
Approved	Bisesi, Michael Salvatore	02/17/2014 10:37 AM	College Approval
Revision Requested	Vankeerbergen, Bernadette Chantal	02/17/2014 11:34 AM	ASCCAO Approval
Submitted	Ferketich, Amy Kathleen	03/04/2014 05:18 PM	Submitted for Approval
Approved	Katz, Mira L.	03/04/2014 05:18 PM	Unit Approval
Approved	Bisesi, Michael Salvatore	03/05/2014 12:00 PM	College Approval
Pending Approval	Hanlin, Deborah Kay Hogle, Danielle Nicole Jenkins, Mary Ellen Bigler Nolen, Dawn Vankeerbergen, Bernadette Chantal	03/05/2014 12:00 PM	ASCCAO Approval

ATTACHMENT 3 – Course Syllabus



The Ohio State University College of Public Health

Course Syllabus

The Ohio State University College of Public Health
PUBHEPI 2410 – Introduction to Epidemiology
3 credit hours – SEMESTER, YEAR

Instructor: Randall Harris, MD, PhD

Office location: 306 Cunz Hall

E-mail: rharris@cph.osu.edu

Class Time and Location: Monday, Wednesday lecture; recitation or distance day each week

Instructor's Office Hours:

TA Name, email, and office hours:

TA Responsibilities: The TA assigned to the course will hold regular office hours and lead review sessions for any students who need help with class material. The TA may assist with scoring homework and exams; however, final grades will be assigned by the professor. Any questions regarding grading should be directed to the professor and not the TA.

Course Description: This is an introductory course designed to cover basic principles and procedures in the field of epidemiology. The lectures will present critical information to the student on historical events in the evolution of the discipline; the natural history of disease; critical features of infectious and chronic diseases; elements of screening for disease; case definitions and the international classification of disease system; basic parameters used in epidemiology including incidence, prevalence, odds, relative risk, and odds ratio; the importance of age adjustment of mortality and morbidity data; design of epidemiologic investigations with emphasis on prospective cohort studies and case control studies; and the evaluation of disease clusters, and potential epidemics and outbreaks of diseases.

The PBS Series "Rx For Survival: A Global Health Challenge" narrated by Brad Pitt is part of the class. This remarkable documentary provides a comprehensive overview of major public health and epidemiologic issues that currently impact upon the world population. These films include vignettes of major breakthroughs in epidemiology and public health that vividly demonstrate the principles and procedures of epidemiologic investigation and disease prevention.

Students successfully completing the course are expected to gain an academic foundation for the application of epidemiologic methods for exploration of the causes and conditions that influence the origin, propagation, mitigation and prevention of diseases that afflict the human population.

Class Format: The class will consist of two lectures per week and either one distance lecture or a recitation with a TA.

Course Objectives: The overall objective of the course is to give the student a basic understanding of the principles and procedures of epidemiology. The course is designed to prepare the student for entry into graduate level courses in epidemiology. Student learning objectives are listed below.

1. Summarize historical events in the field of epidemiology.
2. Explain the concept of the natural history of infectious and chronic diseases.
3. Summarize major causes of mortality and morbidity for developed and developing nations.
4. Summarize basic concepts in infectious disease epidemiology including the incubation period, attack rate, acquired and innate herd immunity and portals of entry and exit into the human system.
5. Summarize basic concepts in chronic disease epidemiology including the empiric induction period, screening for antecedent conditions, risk factors and preventive factors and selected concepts regarding diagnosis and treatment.
6. Summarize basic concepts of primary, secondary and tertiary prevention.
7. Perform calculations of sensitivity, specificity, predictive value positive and predictive value negative for a diagnostic test.
8. Differentiate between incidence and prevalence epidemiologic measures.
9. Use and apply basic methods of rate calculations for diseases and state the importance of rate adjustments for age and other potential confounders.
10. Describe the basic features of epidemiologic investigations (case studies, surveillance studies, case control studies, cohort studies) and intervention studies (field studies and randomized clinical trials).
11. Define and interpret relative risk and the odds ratio.

Core Competencies in Public Health

1. Discuss various approaches/strategies for identification, response and intervention to address and attempt to resolve common public health issues.
2. Identify political, cultural, behavioral and socioeconomic factors related to global public health issues.
3. Apply the fundamental principles of the five core disciplines of public health (biostatistics; environmental health; **epidemiology**; health administration; health behavior/promotion) to domestic and international population issues.

Specialization Competencies –Public Health Sociology

1. Develop quantitative awareness of the multiple-scale, and multiple interactions that characterize public health problems.
2. Summarize major factors that contribute to human disease and compromised quality of life.
3. Analyze and interpret fundamental statistical and epidemiological data.

General Education Information

Category: Social Science, Individuals and Groups

Expected Learning Outcomes:

1. **Students understand the theories and methods of social scientific inquiry as they apply to the study of individuals and groups.**

2. **Students understand the behavior of individuals, differences and similarities in social and cultural contexts of human existence, and the processes by which groups function.**
3. **Students comprehend and assess individual and group values and their importance in social problem solving and policy making.**

In this course, students will learn about population health: how to measure health at the population level and which groups, or individuals, are most susceptible to different diseases. Students will learn about different study designs that are used to assess the health of a population. Throughout the semester, students will be exposed to examples of public health policies that have been influenced by epidemiologic data.

Text/Readings: Epidemiology for Public Health Practice, Fifth Edition by Robert H. Friis & Thomas A. Sellers, Jones & Bartlett, 2014.

Grading: Grades are determined by performance on the midterm and final examinations, Carmen quizzes, and participation in recitation.

Midterm Examination:	35%
Final Examination:	35%
Carmen quizzes	20%
Participation	10% (NOTE: You must be ON TIME and ACTIVELY PARTICIPATE in recitation discussions to receive full credit)

The following is an approximate guide showing the correspondence of final percentages to final letter grades:

<u>Percentage</u>	<u>Letter Grade</u>
93 – 100	A
90 – 92	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
67 – 69	D+
60 – 66	D
< 60	E

If you have questions or concerns about grading or about your individual performance on exams, please see your instructor, not the TA.

Exams: Exams consist of multiple choice and matching questions. Students who cannot take the exam at the designated time must arrange, *in advance*, a time to take a makeup exam with the instructor.

Quizzes: Upon completion of each distance learning lecture, students will need to take a short quiz on Carmen. The quiz will be active up until 8:00 PM the night before the topic will be discussed in class (see the class schedule for exact dates). Students must receive at least 80% on all quizzes in order to receive full credit for this portion of the grading. If quizzes are not completed before the deadline or if the score

is less than 80%, 0 points will be given for that quiz. **Quizzes must be completed without the help of other individuals (books and notes are ok).**

Carmen: Power point presentations will be posted on Carmen approximately one week prior to the scheduled lectures for the course.

Class Policies:

1. Examinations are closed book. Use of a hand calculator is allowed.
2. Students are expected to focus on the presentation and discussion during class time. Students may use recording devices to record the class. Cell phones and pagers may be used to receive emergency telephone or pager messages, but only if they are rendered inaudible. Laptop and tablet computers may be used, but only to take notes (i.e., no music, e-mail, texting, social networking, web browsing, etc.) and no other electronic devices may be used at any time (e.g., iPods or other music players).

Office of Disability Services: Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

Academic misconduct: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

Course Outline:

Week	Date	Format	Lecturer	Subject
1	8/27	Lecture	Harris	Introduction, discussion of class format
1	8/29	DISTANCE		*Rx for Survival: Disease Warriors <i>Carmen quiz due 9/2 at 8:00 PM</i>
2	9/1			<i>NO CLASS – LABOR DAY</i>
2	9/3	Lecture	Harris	Chapter 1: History and Scope of Epidemiology
2	9/5	RECITATION	TA	Review of chapter 1 study questions
3	9/8	Lecture	Harris	Chapter 2: Practical Applications of Epidemiology Topics: Uses of epidemiology, trends in health and illness, population dynamics
3	9/10	Lecture	Harris	Chapter 2: Practical Applications of Epidemiology Topics: Disease etiology, risk factors, types of prevention
3	9/12	DISTANCE		*Rx for Survival: Deadly Messengers <i>Carmen quiz due 9/14 at 8:00 PM</i>
4	9/15	Lecture	Harris	Chapter 3: Measures of Morbidity and Mortality Topics: Risk and rates, prevalence

Week	Date	Format	Lecturer	Subject
4	9/17	Lecture	Harris	Chapter 3: Measures of Morbidity and Mortality Topics: Crude rates, adjusted rates
4	9/19	RECITATION	TA	Review of chapter 2 & 3 study questions
5	9/22	Lecture	Harris	Chapter 4: Descriptive Epidemiology Topics: Characteristics of person and place
5	9/24	Lecture	Harris	Chapter 4: Descriptive Epidemiology Topics: Characteristics of time
5	9/26	DISTANCE		*Rx for Survival: Deadly Messengers <i>Carmen quiz due 9/28 at 8:00 PM</i>
6	9/29	Lecture	Harris	Chapter 5: Sources of Data Topics: Vital statistics systems
6	10/1	Lecture	Harris	Chapter 5: Sources of Data Topics: Surveys, disease registries
6	10/3	RECITATION	TA	Review chapter 4 & 5 study questions
7	10/6	Lecture	Harris	Review for Midterm Exam
7	10/8	EXAM		Midterm Exam
7	10/10	DISTANCE		*Rx for Survival: Rise of the Superbugs <i>Carmen quiz due 10/12 at 8:00 PM</i>
8	10/13	Lecture	Harris	Chapter 6: Study Designs Topics: Ecologic and cross-sectional
8	10/15	Lecture	Harris	Chapter 6: Study Designs Topics: Case-control studies and odds ratios
8	10/17	RECITATION	TA	Review of chapter 6 study questions
9	10/20	Lecture	Harris	Chapter 7: Cohort Studies Topics: Overview of types of cohort studies, cohort effects
9	10/22	Lecture	Harris	Chapter 7: Cohort Studies Topics: Life table methods using cohort study data, relative risk estimation
9	10/24	DISTANCE		*Rx for Survival: Back to the Basics <i>Carmen quiz due 10/26 at 8:00 PM</i>
10	10/27	Lecture	Harris	Chapter 8: Experimental Study Designs Topics: Hierarchy of study designs, intervention studies
10	10/29	Lecture	Harris	Chapter 8: Experimental Study Designs Topics: Clinical and community trials
10	10/31	RECITATION	TA	Review of chapter 7 & 8 study questions
11	11/3	Lecture	Harris	Chapter 11: Screening for Disease Topics: When to screen, characteristics of tests
11	11/5	Lecture	Harris	Chapter 11: Screening for Disease Topics: Sensitivity, specificity, predictive value of screening tests
11	11/7	DISTANCE		*Rx for Survival: Delivering the Goods <i>Carmen quiz due 11/9 at 8:00 PM</i>
12	11/10	Lecture	Harris	Chapter 12: Epidemiology of Infectious Diseases
12	11/12	Lecture	Yotebieng	HIV in Developing Nations

Week	Date	Format	Lecturer	Subject
12	11/14	RECITATION	TA	Review of chapter 11 study questions
13	11/17	Lecture	Sturdivant	The Intersection of Epidemiology and Biostatistics
13	11/19	Lecture	Sturdivant	The Intersection of Epidemiology and Biostatistics
13	11/21	DISTANCE		*Rx for Survival: How Safe Are We? <i>Carmen quiz due 11/23 at 8:00 PM</i>
14	11/24	Lecture	Harris	Chapter 16: Epidemiology as a Profession
14	11/26			<i>NO CLASS – THANKSGIVING HOLIDAY</i>
14	11/28			<i>NO CLASS – THANKSGIVING HOLIDAY</i>
15	12/1	Lecture	Harris	Epidemiology of Cancer
15	12/3	Lecture	Foraker	Epidemiology of Cardiovascular Disease
15	12/5	RECITATION	TA	Review for Final Examination
16	12/8	Lecture	Ferketich	Epidemiology of the Global Tobacco Epidemic
				Final Examination

***PBS Series “Rx For Survival: A Global Health Challenge” narrated by Brad Pitt**

**The Ohio State University General Education (GE)
Request for Course Approval Summary Sheet**

1. Academic Unit(s) Submitting Request:

College of Public Health
Division of Epidemiology

2. Book:

Epidemiology for Public Health Practice, Fifth Edition by Robert H. Friis & Thomas A. Sellers,
Jones & Bartlett, 2014.

3. Registrar Listing and Number:

PUBHEPI 2410 *Introduction to Epidemiology*

3. GE area(s) for which course is to be considered:

Social Science (Individuals and Groups)

4. Attach:

- A statement as to how this course meets the general principles of the GE Model Curriculum and the specific goals of the category(ies) for which it is being proposed (see page 2)
- An assessment plan for the course (see page 3); and
- The syllabus, which should include the category(ies) that it satisfies and objectives which state how this course meets the goals/objectives of the specific GE category(ies) (see attached syllabus)

5. Proposed Effective Date:

Spring Semester 2015

6. If your unit has faculty members on any of the regional campuses, have they been consulted?

Not Applicable

7. Select the appropriate descriptor for this GE request:

- ✓ Existing course with no changes to the *Course Offerings Bulletin* information. Required documentation is this GE summary sheet, the course change request, and the course syllabus.

GE rationale

a) How do the course objectives address the GE category expected learning outcomes?

The course PUBHEPI 2410 *Introduction to Epidemiology* will fulfill the GE category Social Science, Individuals and Groups. The objectives for this category are:

1. Students understand the theories and methods of social scientific inquiry as they apply to the study of individuals and groups.
2. Students understand the behavior of individuals, differences and similarities in social and cultural contexts of human existence, and the processes by which groups function.
3. Students comprehend and assess individual and group values and their importance in social problem solving and policy making.

Introduction to Epidemiology teaches students how to study the health of populations. Specifically, students learn how to study disease incidence and prevalence at the population level and how to determine whether certain factors are related to disease. For example, students learn how race, age, gender, and poverty affect disease incidence and prevalence, as well as mortality. In addition to learning about demographic and socioeconomic differences in disease patterns, students learn about how individual behaviors affect the probability of being diagnosed with diseases. Students learn about disease patterns in the United States, as well as in developing nations. They are taught about the differences in the leading causes of death between developed and developing nations, and the reasons for these differences. Finally, students learn about how epidemiologic investigations are important drivers of health policy.

b) How do the readings assigned address the GE category expected learning outcomes?

The chapters in the textbook cover descriptive epidemiology (how characteristics of person, place and time affect disease rates), study design (methods for studying populations), measures of association (how you can tell if individual characteristics or behaviors affect disease rates), and disease screening (which has a policy focus, given how screening programs are developed and implemented). The *Rx For Survival: A Global Health Challenge* video series that students will watch focuses on poverty and disease in developing nations, and presents possible solutions for change, focusing on policy approaches to change.

c) How do the topics address the GE category expected learning outcomes?

While most of the topics are related to methods, and how one can study groups of individuals to determine who is at greater risk for disease (hence, addressing the first two objectives), the course also has topics that deal with the third objective. The video series, as well as the disease- or risk factor-specific lectures will present information on policies that have been developed to address HIV, cancer, cardiovascular disease, and tobacco.

d) How do the written assignments address the GE category expected learning outcomes?

The written assignments are in the form of end-of-chapter questions that students will complete and review in the recitation. As indicated in part b, the readings address the GE learning outcomes. Each chapter in the text book has questions that students will be expected to complete and discuss in the recitation. Thus, these written assignments should directly address the learning outcomes.

GE Assessment Plan for the Course

a) Specific methods used to demonstrate student achievement of the GE expected learning outcomes

Direct method: Mostly direct methods will be used. Questions embedded in the online quizzes and exams will be used to measure the achievement of the expected learning outcomes. These questions will be scored and will contribute to the total exam or quiz grade. However, the instructor will also examine these questions separately in order to determine whether the course needs to be revised to better address the GE learning outcomes. The Appendix of this document contains specific examples of embedded questions.

Indirect method: During at least two recitation periods, students will be asked to complete an in-class short writing where they will be asked to reflect on the information learned in class and how it relates to the GE learning outcomes. These writings will not be graded, but rather used by the instructor to determine whether the course is adequately addressing the GE learning outcomes.

b) Explanation of the level of student achievement expected

Success on the embedded exam questions and quizzes will be defined as answering at least 80% of the items correctly (thus, a B- performance).

c) Description of follow-up/feedback process

At the end of the semester, the embedded exam and quiz questions will be examined. If there are certain areas where students performed poorly, the instructor will determine whether the information needs to be presented differently or if more time needs to be spent on that area. The in-class writings will also be examined carefully to determine how students are self-reflecting on the class and their performance. Adjustments to the class may occur if the students demonstrate, through the writings, that they are not able to relate what they are learning about in class to the GE learning outcomes.

Appendix – Example quiz and exam questions and example in-class writing questions

Exam and quiz questions

A cohort study was conducted to examine cigarette smoking and the risk of oral cancer. The investigators selected exposed and unexposed subjects so that they had the exactly same distribution of race. This method to address confounding by race is called: (CIRCLE ONE ANSWER.)

- a. Restriction
- b. Stratification
- c. Matching
- d. Multivariate analysis
- e. None of the above

A study of the risk of pulmonary hypertension among women who take diet drugs to lose weight. The crude relative risk of pulmonary hypertension comparing diet drug users to non-users is 17.0 and the age adjusted relative risk is 5.0. Is age a confounder in this study?
YES/NO

A cohort study of liver cancer among alcoholics. Incidence rates of liver cancer among alcoholic men are compared to a group of non-alcoholic men. Is gender a confounder in this study?
YES/NO

Suppose that your company has just developed a new screening test for a disease and you are in charge of testing its validity and feasibility. You decide to evaluate the test on 1000 individuals and compare the results of the new test to the gold standard. You know the prevalence of disease in your population is 30%. The screening test gave a positive result for 292 individuals. 285 of these individuals actually had the disease on the basis of the gold standard determination.

- Calculate the sensitivity of the new screening test.
- Interpret the results of sensitivity calculation in one sentence.
- Calculate the specificity of the new screening test.
- Interpret the results of specificity calculation in one sentence.
- Calculate the predictive value of a positive test.
- Interpret the results of the predictive value positive calculation in one sentence.

A study was conducted on the relationship between folic acid supplementation during pregnancy and the risk of having a child with a neural tube defect. The risk ratio comparing supplemented versus non-supplemented women was 0.33. This means that women who take folic acid were 67% less likely to have a child with a neural tube defect. TRUE/FALSE

A cross-sectional study of the relationship between blood type and the risk of cataracts will produce misleading results because you cannot tell the correct temporal relationship between the exposure (blood type) and disease (cataracts). TRUE/FALSE

A case-control study is most efficient design for studying the health effects of rare exposures. TRUE/FALSE

A retrospective cohort study is more efficient than a prospective cohort study for studying diseases with a long latent and induction period. TRUE/FALSE

When chance, bias, and confounding have been ruled out as alternative explanations for an association, we may conclude that the association is causal. TRUE/FALSE

In-class writings

In your own words, describe how the prevalence, incidence, and mortality provide different information about a disease at the population level. Pretend you are explaining these concepts to your friends who know nothing about epidemiology.

Consider all the study designs we covered so far this semester. Pick one and describe how you might use this design to study a disease you are interested in and a lifestyle behavioral factor that might increase or decrease the risk of disease.

Now that the course is nearly finished, how will the content we have talked about all semester help you to better understand population-level health?