

Submit original with signatures + "copy" + electronic copy

1. Title of the course

2. Description of the course

3. Prerequisites

4. Learning Objectives

5. Course Content

6. Assessment Methods

7. Texts/References

8. Other Information

9. If the course is a new course, it must be approved by the college council in six weeks must be approved by the core review committee.

(check all that apply) Full semester

OTHER FORMAT (specify)

Mode of delivery (specify lecture, labs)

10. Signature of the course designer

11. Signature of the department chair

12. Signature of the dean

13. Signature of the core review committee chair

14. Signature of the college council chair

10. COMPLETE CATALOG DESCRIPTION including dept., number, title and credits (50 words or less, if possible):

BIOL 394, Principles of Epidemiology, 3 credits. Introduction to the basic concepts of epidemiology, with examples from human and veterinary medicine, including chronic and infectious disease epidemiology, social epidemiology, outbreak investigation, properties of tests, and an introduction to study design and surveillance.

11. ~~COMPARISON OF MATHEMATICS: (undergraduate courses only. Use approved criteria found~~

sheet.)

H = Humanities

S = Social Sciences

Will this course be used to fulfill a requirement for the baccalaureate core?

YES

NO

X

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive,
Format 6

W = Writing Intensive,
Format 7

Natural Science,
Format 8

NO Yes 8/30/10 Karen Jensen directed me to the following

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Signature of Applicant: _____

Signature of School Official: _____

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BIOLOGY 3XX
PRINCIPLES OF EPIDEMIOLOGY
Spring 2010, 3:00-4:00

Andrew Bershan, Ph.D.

Office: 234 AHRB

Telephone: (907)474-6129

Office Hours

... is the study of the distribution and determinants

... of disease in human populations

... and the application of this knowledge to the control of disease

... and the promotion of health

... and the prevention of disease

... and the improvement of the health of the community

... and the study of the natural history of disease

... and the study of the social and environmental determinants of disease

... and the study of the genetic determinants of disease

... and the study of the psychological determinants of disease

... and the study of the behavioral determinants of disease

... and the study of the cultural determinants of disease

... and the study of the economic determinants of disease

... and the study of the political determinants of disease

... and the study of the legal determinants of disease

... and the study of the ethical determinants of disease

... and the study of the moral determinants of disease

... and the study of the spiritual determinants of disease

... and the study of the divine determinants of disease

Instructional Methods

The course will include lectures, class discussions, case studies, text book and journal article

readings and assignments. Student participation is important and this requires that all students

come prepared having read the required readings in advance.

Course Readings

Required:

- Gordis L. *Epidemiology*, 4th ed: Saunders Elsevier, 2008
- Additional readings will be assigned to supplement the main textbook or as part of

various homework assignments; these will be made available on Blackboard.

Demographic and health surveys (DHS) <http://www.measuredhs.com/>
Health Systems Database: <http://healthsystems2020.healthsystemsdatabase.org>
CDC Morbidity and Mortality Weekly Report: <http://www.cdc.gov/mmwr/>

Alaska Health and Social Services Department of Epidemiology: <http://www.epi.hss.state.ak.us/>

Student Evaluation

Points Possible:

| | |
|-----------------|--------------------|
| Exams | 3 @100 points |
| Assignments | 10@ 10 points each |
| Content Reviews | 50 points |

Total Possible Points: 450

Grades will be on a straight percentage basis.

A= 94-100%; A-=90-93.9%
B+= 87-89.9%; B= 84-86.9% ;B-= 80-83.9%
C+= 77-79%; C= 74-76.9% ; C-= 70-73.9 %
D+= 67-69.9% ; D = 64-66.9% ; D-= 60-63.9%

F= 59% and below

Instructor and course evaluation:

hand-outs or posted on Blackboard. **Student participation is important and this requires that all students come prepared having read the required readings in advance.**

Students will be required to give one 20 minute presentation that reviews the content from an earlier lecture. This presentation will not simply review of the lecture, but should incorporate examples from outside readings or sources (e.g. journal articles, textbooks, government websites). Students will also provide the class with an **in-class activity** that supports the learning and understanding of the concept as well as **one-page review sheet**. These presentations will be done in groups. Sign-ups will occur the second week of class. This is worth 50 points.

Reaction cards:

At the end of each class session on Thursdays, please write a short (two to three sentences) question or comment pertaining to the class discussion or provide feedback on how the class is going for you. Write your comment or question on a 3x5 card with your full name and date printed clearly at the top of the card. Please give your card to me before leaving the class. You are responsible for buying (or sharing with a friend) a pack of 3x5 cards to use for this purpose.

UAF Disability Services

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. **** If you require any assistance due to**

make whatever accommodations are necessary

Detailed schedule of topics, concepts, key terms, readings, and assignments

Concepts and key terms are provided for each week of the course, and these should be used to ensure that you've understood the reading material and lectures.

Introduction to Epidemiology

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- Double-blind, randomized controlled trial
- Placebo or control group
 - Purpose of standardization and blinding
 - Generalizability
 - Non-compliance
 - Strengths and limitations

- Clinical considerations of conducting trials
 - Three major US randomized trials

Readings:

Reduction in the incidence of type 2 diabetes with lifestyle intervention and metformin. NE

Concepts and key terms:

- Case-control study
- Selection of exposed controls
- Recall bias

Readings:

Cardiovascular disease and the metabolic syndrome. NE

- Relationship between exposures and outcomes
- Odds ratio and a relative risk
- Absolute risk
- Attributable risk

Readings:

Gordis, Chapter 11 and 12

Spring Break
March 15 and 17

Causal Inference
March 22

Concepts and key terms:

- Association vs. causation
- Criteria for causality, Koch's postulates
- Real or spurious association

Readings:

Gordis, Chapter 14

Bias, Confounding and Interaction

Readings:
Gordis, Chapter 16

Concepts and key terms:

- Efficacy, effectiveness, and efficiency
- Steps involved in health planning
- examples of disease prevention and health promotion strategies
- Examples of interventions to address the social determinants of health

- Sources and impact of uncertainty

Readings:

Francis, JA, et al. (2006) Challenging the epidemiologic evidence on passive smoking: tactics of tobacco industry expert witnesses. *Tobacco control*. 15 (Suppl IV)

Taubes G. Do we really know what makes us healthy? *The NY Times Magazine*. Sept. 16, 2007.
<http://www.nytimes.com/2007/09/16/magazine/16epidemiology-t.html>

Gordis, Chapter19