Prefix and number: VET_PATH 571-02
Title: Analysis in Epidemiology

Credit hours: 1

Prerequisites: Algebra, VET_PATH 571-01
Current semester and year: Spring 2018
Meeting schedule:
    Time: MWF 4:10-5 PM, Feb 12 – March 23, 2018
    Place: Bustad Hall Room 404

Instructor and Course Coordinator: Dr. Eric Lofgren
    Eric.Lofgren@wsu.edu
    Office: Allen Center 311
    Office hours by appointment

Module Description: This module will introduce the graduate student to the basic analytical toolkit of modern observational epidemiology: statistical regression. The student will be able to read and critique epidemiological studies, assess which analytical strategies are appropriate for their research questions, and perform basic statistical analysis using the R programming language. Examples from medical and veterinary literature will be discussed. This module is helpful, but not necessary, for those who wish to take module 3.

Required Textbook: There is no required textbook for this module. Potential sources for those interested in a deeper treatment of topics will be provided during lectures.

Other textbooks and resources:
- *Modern Epidemiology 3rd Edition* by Rothman, Greenland and Lash. Available from Amazon: https://www.amazon.com/Modern-Epidemiology-Kenneth-J-Rothman/dp/1451190050

Course Website: In lieu of Blackboard, material for the course will be available on Github at https://github.com/epimodels/AnalysisInEpi .

Description of required assignments: Each week students will be assigned one problem set to be due the Monday of the following week. Each problem set is worth 10 points for a total of 50 points. The remaining 50 points will be based on class participation. Each student may solve the problem set on her or his own, or may work in groups.

Policy on late assignments: Assignments that are submitted after the beginning of class on Monday will receive one-half of the total graded points (i.e. a maximum of 5 points).

Grading policy:
96-100 points: A
90-95 points: A-
86-89 points: B+
80-85 points: B
76-79 points: B-
70-75 points: C
< 70 points: F

Assigning Incompletes: University policy (Acad. Reg. #90) states that Incompletes may only be awarded if: "the student is unable to complete their work on time due to circumstances beyond their control".

Attendance policy: There is no formal attendance policy, however 50% of your class grade is based on participation – by extension it is impossible to pass the class without attending and actively participating.

WSU Reasonable Accommodation Statement:
Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information contact a Disability Specialist on your home campus. Pullman or WSU Online: 509-335-3417, Washington Building 217; http://accesscenter.wsu.edu, Access.Center@wsu.edu.
All students requesting reasonable accommodation must meet with the instructor prior to or during the first week of the course to review all proposed accommodations in relation to course content and requirements. Exceptions to this timeframe will be granted only upon a showing of good cause.

WSU Academic Integrity Statement: Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will fail the course, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.
Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If

you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding. If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at https://conduct.wsu.edu/.

Classroom Safety Statement: Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the "Alert, Assess, Act," protocol for all types of emergencies and the "Run, Hide, Fight" response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).
Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI's Run, Hide, Fight video and visit the WSU safety portal.

Week-to-week course outline:

Date	Day	Topic	Assignment Due
2/12	Mon	Housekeeping and administrative issues Why Regression? Types of Observational Data	None
2/14	Wed	Linear Regression – Applications in R	
2/16	Fri	Case-Control Data	
2/19	Mon	President's Day – NO CLASS	PS1
2/21	Wed	Logistic Regression – Applications in R	
2/23	Fri	Logistic Regression examples and discussion	
2/26	Mon	Cohort Data	PS2
2/28	Wed	Binomial Regression – Applications in R	
3/2	Fri	Complications: Missing data, non-convergence	
3/5	Mon	Cohort Studies II: Time to Event Data	
3/7	Wed	Survival Analysis – Applications in R	
3/9	Fri	Alternate adjustment methods	
3/12	Mon	Spring Break	

3/14	Wed	Spring Break	
3/16	Fri	Spring Break	
3/19	Mon	NO CLASS	
3/21	Wed	NO CLASS	
3/23	Fri	NO CLASS	PS3 & PS4