Diné College

# PUH 295 Public Health Sciences

## An Introduction to Epidemiology and Biostatistics

## Course Syllabus

### Fall 2017

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**Course Description:**

This course will introduce students to the Public Health Sciences of Epidemiology and Biostatistics. The course will provide students with skills for identifying relevant and appropriate data and information sources. It will explore relationships of risk factor and disease outcomes, with particular attention to health priorities on the Navajo Nation. It will introduce students to epidemiologic research designs and to the statistics used to measure associations, continually stressing the ways in which epidemiology and biostatistics influence public health decision-making.

The academic program in Public Health at Diné College has been developed to be consistent with and to advance the implementation of the Diné Educational Philosophy (DEP) of the college. This course falls mainly within the domains of *Iiná*  (Living) and *Sii Hasin*  (Reflection, Evaluation) within the DEP. Students will learn how to use the knowledge and skills of Epidemiology and Biostatistics to do public health practice (*Iiná*) and will also learn how to use these tools to measure and evaluate their own work and the work of others who are engaged as public health practitioners (*Sii Hasin*). For any particular project, the full four direction model will be utilized.

**Pre-Requisites:**

PUH 111 and either Math 110, 114 or 118.

**Course Objectives:**

1. Students will gain an understanding of how Epidemiology and Biostatistics contribute to the field of public health.
2. Students will become familiar with epidemiologic and biostatistical concepts and basic terminology used.
3. Students will understand associations between disease attributes and health outcomes.
4. Students will understand and interpret common measures of association such as relative risk and odds ratio.
5. Students will be introduced to various research designs used in epidemiology.
6. Students will learn the importance of data collection and data maintenance in public health.
7. Students will be able to identify appropriate uses and limitations of data and sources of information relevant to public health issues and practice.
8. Students will be able to identify independent and dependent variables in research designs.
9. Students will be able to interpret computer-generated outputs for the more commonly used statistical tests (two-way tables and chi-square).
10. Students will learn to understand variables and how to create numerical and graphical summaries using Microsoft Excel and collected data.
11. Students will be able to perform basic statistical analyses using computer Data Analysis with Microsoft Excel.
12. Students will learn how to read and interpret public health research articles and findings.

**Required Texts:**

##### Aschengrau and Seage III, Essentials of Epidemiology in Public Health. 3rd Edition, 2013, Jones and Bartlett Publishers.

**Grading and Evaluation Criteria:**

1. Assignments, usually at least one each week (20%)
2. Quizzes (20%)
3. Attendance and Participation in classes (10%)
4. Mid-Semester Exam (25%)
5. Final Exam (25%)

**Both the Mid-Semester Exam and the Final Exam will be in-class exams and will consist of questions that will require short answers and basic statistical calculations. They may include a “take-home” section.**

**Other Requirements**

Students are reminded that Diné College has an official policy on “Academic Integrity” which appears on page 36 of the *General Catalog*. This policy deals with various problems of academic dishonesty and lists several possible outcomes (penalties) that may result from violation of this policy, including failing the course, being dismissed from the course, or being placed on probation or suspension. Students are expected to be familiar with this policy and to maintain high standards of academic integrity in all of their academic work at Diné College.

It is *essential* that students enrolled in this class are able to have ready access to the Internet, including the portion of the Diné College website that will carry schedules, homework and reading assignments and other essential course documents. We will use the website to provide handouts, assignments, announcements, and discussion areas. Students must be able to download and print files. Since there are sometimes large numbers of students enrolled in this class, and they are spread out over the entire Navajo Nation, this electronic means of communication is the only way that we can possibly organize and deliver this course in a successful manner.

You will need to be sure that your Warrior ID (your Diné College computer login) is working for you and that you remember the password. Call the Computer Help Line at X6644 (from off campus dial 928-724-6644) if you need help with that. Early in the semester, we will devote a portion of one class session to explaining and demonstrating how to access and use the course interface on the Diné College website.

 Reading assignments, Homework assignments and other course materials will be posted on the website, usually at least one day before the class session during which they will be discussed or assigned. Students should have a way to print these materials, if possible. In turn, students will be expected to submit their Homework assignments, Projects and other course materials to the Instructor by browsing, selecting and uploading them as files on the website, then submitting them.

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Mark Bauer, PhD, Instructor Donald Robinson, PhD, Chair, Science Division