

Course at a Glance



Course Title: Biostatistics I

Course Number: PHC 6050

Dept: EPB

Credits: 3

Traditional Section: 310

Reference Number: 50203

For GDM, PHP, IMSPH, ExMPH Sections: please visit Self-Funded Program [website](#) for course reference numbers, registration procedures and deadlines.

Instructor Name: Dr. Henian Chen, Associate Professor of Biostatistics

Instructor Email: hchen1@health.usf.edu

Course Description:

The course is intended to impart an understanding of the principles and methods of reasoning that underlie modern biostatistics, providing the basis for further study in epidemiology and biostatistics. The course will provide information concerning specific descriptive and inferential techniques commonly used in public health research.

Format of content presentation, activities and/or instructional methods:

Web-based (in CANVAS) with self-paced narrated interactive learning units and presentations to review the content in the textbook. Students may participate in optional live, virtual group and individual interactive help sessions.

Course content organization:

Course is organized by sessions with new materials available every Tuesday. There are a total of 15 weekly sessions. All exams are given on Thursday. Optional Live Virtual Help Sessions (via Elluminate Live! software) will be held on Tuesday evenings from 7:30pm to 9pm.

Textbook and Ordering materials:

Essentials of Biostatistics in Public Health, Second Edition, by Lisa M. Sullivan, Jones and Bartlett, 2012.

SPSS Survival Manual, 5th edition by Julie Pallant, McGraw-Hill, 2013.

Textbooks available at HSC Bookstore <http://usfhsc.bkstore.com>. OR at Amazon.com

Each student also should have a licensed version of SPSS available to them for the homework and practice sessions. Software is available from the USF Computer Store, either on-campus or on-line. The software will cost \$10.

Other Required Materials:

Each student should have a handheld calculator available for exams, class and homework assignments. The calculator should be able to perform addition, subtraction, multiplication, division, squares, square roots, natural logs and exponents. Calculation of x^y is helpful.

Topics or course learning objectives:

1. Overview of Course; Introduction to Statistics; Populations and Samples; Parameters and Statistics; Descriptive and Inferential Statistics; Scales of Measurement; Summation Notation
2. Distributions and Tables; Graphs; Measures of Central Tendency; Measures of Variability; Measures of Relative Position; Measures of Distributional Shape
3. Probability; Calculating Probability; Contingency and Joint Probability Tables; Independence and Dependence; Dependence and Causation; Assessing Test Performance (Sensitivity, Specificity, etc.); Risk Ratios and Odds Ratios; Normal Distribution; Z-Scores and the Normal Curve
4. Sampling Distributions and the Central Limit Theorem; Binomial Distribution; Making Inferences; Hypothesis Testing
5. One Mean Z-test; Type I and Type II errors, Statistical Power; Statistical Power - Practical Issues; One Mean t-Test; One Sample Tests for a Proportion
6. Equivalence Testing; Confidence Intervals; Relations between Hypothesis Testing and Confidence Intervals
7. Paired Samples t-Test; McNemar's Test
8. Independent Samples t-Test; Internal and External Validity; Liberal and Conservative Tests; Testing for Risk and Odds Ratios
9. One-way Analysis of Variance (ANOVA); Multiple Comparison Procedures; Bonferroni Adjustment
10. Pearson Product-Moment Correlation; Chi-Square Test for Independence
11. Simple Linear Regression; Non-Parametric and Permutation Methods

Types of assessments and activities in the course:

Multiple choice exams. Course grades will be determined by averaging the grades of three on-line exams. Each exam will count for 1/3 of the final grade. All exams are "closed book."

Course Expectations:

The course is divided into weekly 'sessions'. Students are required to complete course content during the week it is presented, as indicated on the course schedule in the syllabus. Each week students are expected to complete the following:

- Textbook readings
- Narrated interactive self assessments
- Exercises
- Participate in group help sessions (optional)

Note: Students are strongly encouraged to view the learning units and presentations in the order they are presented.

Required Dates to be Online:

- | | | | | | |
|----------------------------|------------------------|---------------|-----|----------------|--------|
| 1. Date: 02/11/16 (Thurs.) | Any two hours between: | Time: 8:30 AM | and | Time: 11:59 PM | Online |
| 2. Date: 03/17/16 (Thurs.) | Any two hours between: | Time: 8:30 AM | and | Time: 11:59 PM | Online |
| 3. Date: 04/28/16 (Thurs.) | Any two hours between: | Time: 8:30 AM | and | Time: 11:59 PM | Online |

For more information about the Course, Contact:

Name: Dr. Henian Chen (instructor)

Contact Info: hchen1@health.usf.edu

Other Contacts:

Online 'real-time' group help sessions on Monday evenings from 7:00pm-8:30pm

Online and on-campus individual help available from TA – contact TA for schedule and appointments.

Note: For problems accessing the course materials and other computer technical problems, click the **Tech Assistance** button in your course website and fill out a "Technical Problem Report Form". Tech Assistance button links to the Technical Assistance page of the Office of Educational Technology & Assessment website at:

<http://health.usf.edu/publichealth/eta/techsupport.html>. Students can also receive assistance via telephone at 813-974-6666, Mon-Fri 8:30am-5pm, or via email at eta@health.usf.edu.

Technology Requirements (e.g. software and hardware):

Visit this website for software requirements and downloads:

http://health.usf.edu/publichealth/eta/students_tech_requirements.htm

Other technology requirements (hardware and software) specific for this course:

View hardware & software requirements and downloads for Elluminate Live! sessions

http://eta.health.usf.edu/technology/illuminate/Elluminate_Live10_sessions.pdf

To participate in the online group or individual help sessions you must meet ALL the computer requirements for Elluminate Live!

Note: These are in addition to the basic technology requirements for all CPH online courses.

Please Note: The information on this document is subject to change. The course instructor has the right to change any information posted in this document. Students should check the official course syllabus released during the first week of classes for any updates to this document.