

**Note:**

**Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.**

## ***COURSE SYLLABUS***

---

### **HLTH 501 BIOSTATISTICS**

#### **COURSE DESCRIPTION**

The course prepares the student in the development and application of statistical reasoning and methods in addressing, analyzing and solving problems in public health; healthcare; and biomedical, clinical and population-based research.

#### **RATIONALE**

The purpose of this biostatistics course is to provide students in the Master of Public Health program the opportunity to attain statistical literacy. It is important for public health professionals to be able to understand, apply, and effectively articulate concepts pertaining to research design, data collection, data analysis, results reporting, statistical testing and interpretation. Additionally these professionals must be able to critically evaluate the public health scientific literature in light of the aforementioned concepts.

#### **I. PREREQUISITE**

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

#### **II. REQUIRED RESOURCE PURCHASE**

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

#### **III. ADDITIONAL MATERIALS FOR LEARNING**

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Blackboard [recommended browsers](#)
- D. Microsoft Word

**IV. MEASURABLE LEARNING OUTCOMES**

Upon successful completion of this course, the student will be able to:

- A. Utilize hypothesis testing methods to correctly perform parametric and non-parametric inferential statistical procedures.
- B. Apply basic informatics techniques with vital statistics and public health records to describe a public health problem.
- C. Apply appropriate biostatistical research designs and methods to address a public health problem.
- D. Critically analyze, evaluate, and interpret results from descriptive and inferential statistical procedures.
- E. Develop written and oral presentations reporting statistical analyses for selected audiences.
- F. Recognize the limitations of evidence (e.g., validity, reliability, sample size, bias, and generalizability) in informing public health decisions.
- G. Describe the role of biostatistics in the delivery of essential public health services.
- H. Critically evaluate the results of public health research from the Christian worldview.

**V. COURSE REQUIREMENTS AND ASSIGNMENTS**

- A. Textbook readings, Bible readings, and presentations

- B. Course Requirements Checklist

After reading the Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.

- C. Discussion Board Forums (3)

The student will complete 3 Discussion Board Forums. Each discussion will consist of a thread and a minimum of 2 replies. The instructor is looking for very well written, substantial, thoughtful, and critical discussions.

- D. Chapter Problems (8)

Each week the student will complete 10–15 problems from the chapters that are from the assigned reading. This work will ensure the student understands the concepts he or she is reading and is able to apply those concepts to statistical problems.

- E. Excel Exercises (7)

The student will complete 7 excel exercises to be submitted by 11:59 p.m. (ET) on Sunday of the respective modules/weeks except for the final assignment. The final assignment will be due by 11:59 p.m. (ET) on Friday of Module/Week 8.

- F. Case Study Analysis  
The student will be given a case study to evaluate. The student will use the provided rubric and evaluate/grade the case study.
- G. Quizzes (2)  
The quizzes will be based on the chapter readings. The quizzes are open-book/open-notes and comprised of matching, essays, and short answers. Each student will have 90 minutes to complete each quiz, and the quizzes must be completed in one sitting.
- H. Exams (2)  
The exams will be based on the chapter readings. The exams are open-book/open-notes and comprise of multiple-choice and short answers. The student will have 2.5 hours to complete each exam, and the exams must be completed in one sitting. The Final Exam will include all material presented during the term.

**VI. COURSE GRADING AND POLICIES**

A. Points

Course Requirements Checklist		10
Discussion Board Forums (3 at 25 pts ea)		75
Chapter Problems (8 at 30 pts ea)		240
Excel Exercises (7 at 10 pts ea)		70
Case Study Analysis		80
Quiz 1	(Modules 1–2)	75
Quiz 2	(Modules 3–6)	75
Midterm Exam	(Modules 1–4)	185
Final Exam	(Modules 1–8)	200
	<b>Total</b>	<b>1010</b>

B. Scale

A = 940–1010    A- = 920–939    B+ = 900–919    B = 860–899    B- = 840–859  
 C+ = 820–839    C = 780–819    C- = 760–779    D+ = 740–759    D = 700–739  
 D- = 680–699    F = 679 and below

C. Writing Style

For this course, all papers and written assignments must be completed in the American Medical Association style (AMA).

D. Confidentiality and Limits of Confidentiality

Because many of our students are already actively involved in a career in Health Promotion, the student may have experiences that will naturally lend themselves to the curriculum of this course. To respect the privacy of others, it is imperative that students do not use the names of individuals that they have worked with and/or treated.

In the event of a student's disclosure, either verbally or in writing, of threat of serious or foreseeable harm to self or others, abuse or neglect of a minor, elderly or disabled person, or current involvement in criminal activity, the faculty, staff, administrator, or supervisor will take immediate action. This action may include, but is not limited to, immediate notification of appropriate state law enforcement or social services personnel, emergency contacts, and notification of the appropriate program chair or online dean. The incident and action taken will become part of the student's permanent record.

E. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Accommodation Support (ODAS) at [LUOODAS@liberty.edu](mailto:LUOODAS@liberty.edu) to make arrangements for academic accommodations. Further information can be found at [www.liberty.edu/disabilitysupport](http://www.liberty.edu/disabilitysupport).

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at [equityandcompliance@liberty.edu](mailto:equityandcompliance@liberty.edu). Click to see a full copy of Liberty's [Discrimination, Harassment, and Sexual Misconduct Policy](#) or the [Student Disability Grievance Policy and Procedures](#).

## ***COURSE SCHEDULE***

### **HLTH 501**

Textbook: Sullivan, *Essentials of Biostatistics in Public Health* (2018).

<b>MODULE/ WEEK</b>	<b>READING &amp; STUDY</b>	<b>ASSIGNMENTS</b>	<b>POINTS</b>
<b>1</b>	Sullivan: chs. 1–2 2 presentations	Course Requirements Checklist	10
		DB Forum 1	25
		Chapter Problems 1	30
		Excel Exercise Week 1	10
<b>2</b>	Sullivan: chs. 4–5 12 presentations	Chapter Problems 2	30
		Excel Exercise Week 2	10
		Quiz 1	75
<b>3</b>	Sullivan: chs. 6–7 4 presentations	DB Forum 2	25
		Chapter Problems 3	30
		Excel Exercise Week 3	10
<b>4</b>	Sullivan: ch. 8	Chapter Problems 4 Midterm Exam	30 185
<b>5</b>	Sullivan: ch. 9 1 presentation	DB Forum 3	25
		Chapter Problems 5	30
		Excel Exercise Week 5	10
<b>6</b>	Sullivan: ch. 10 1 presentation	Chapter Problems 6	30
		Excel Exercise Week 6	10
		Case Study Analysis	80
<b>7</b>	Sullivan: ch. 3 3 presentations	Chapter Problems 7	30
		Excel Exercise Week 7	10
		Quiz 2	75
<b>8</b>	Sullivan: ch. 11 1 presentation	Chapter Problems 8	30
		Excel Exercise Week 8	10
		Final Exam	200
<b>TOTAL</b>			<b>1010</b>

DB = Discussion Board

**NOTE:** Each course week begins on Monday morning at 12:00 a.m. (ET) and ends on Sunday night at 11:59 p.m. (ET). The final week ends at 11:59 p.m. (ET) on **Friday**.