Instructor Information:
Yang Yang, Associate Professor   352-294-1933   yangyang@ufl.edu
Department of Biostatistics
College of Public Health & Health Professions
Teaching Assistant: Neda Jalali (nedajalali@ufl.edu)
Office Hours: Monday 10:30am-11:30am (on-campus students), Tuesday 3:00pm-4:00pm (online students). Additional help can be made by appointment

Prerequisites: Multivariate calculus similar to MAC 2313

Course Overview: This is a required core course for the MS program in Biostatistics. It will provide a detailed introduction to basic statistical theory such as point estimation, hypothesis testing, asymptotic theory and Bayesian inference.

Course Objectives: Upon successful completion of the course, students will be able to

understand the fundamental concepts in estimation and statistical testing as well as their applications in Bayesian inference and linear regression.

Required Textbook: Abramovich, A. and Ritov, Y. (2013) Statistical Theory: A Concise Introduction, CRC Press.
ISBN 978-1-4398-5184-5

Recommended Reference Books:
George Casella and Roger Berger (2002) Statistical Inference (2nd edition), Duxbury. ISBN 978-0-5342-4312-8

E-Learning/Canvas: An E-Learning site in Canvas will be available for the course. Grades, discussion boards, and other information will be available in the E-Learning system. E-learning is accessible at lss.at.ufl.edu or through my.ufl.edu. You must have a valid Gatorlink ID and password. For assistance, call the UF Help Desk at 392-HELP

Useful external lecture videos: (strongly recommended for students with difficulties in calculus or basic probability theory)

MIT single-variable calculus

https://www.youtube.com/watch?v=7K1sB05pE0A&index=1&list=PL590CCC2BC5AF3BC1
MIT Open: Probabilistic systems analysis and applications
https://www.youtube.com/watch?v=j9WZyLZCBzs&list=PLUl4u3cNGP60A3XMwZ5sep719_nh95qOe

Course Requirements/Evaluation/Grading: Students will be evaluated based upon homework assignments and exams. Exams will be in class.

- ☐ Homework (20%)
- ☐ Attendance (10%)
- ☐ Class Presentation (not scheduled)
- ☐ Exam I (30%)
- ☐ Exam II (40%)

The grading scale for this course consists of the scale, including minus grades, below. The conversion factors for grade point values assigned to each grade are also included (in parentheses):

94% - 100% = A (4.00)	77% - 79% = B- (2.67)	64% - 66% = D+ (1.33)
90% - 93% = A- (3.67)	74% - 76% = C+ (2.33)	60% - 63% = D (1.00)
85% - 89% = B+ (3.33)	70% - 73% = C (2.00)	57% -592% = D- (0.67)
80% - 84% = B (3.00)	67% - 69% = C- (1.67)	Below 57% = E (0.00)

For more detail on letter grades and university policies related to them, see the Registrar's Grade Policy regulations at http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html

Homework: Bi-weekly assignments are planned. Information will be provided in class. Discussion on homework problems is allowed, but plagiarism is prohibited.

Class Involvement: students are encouraged to be actively engaged in classes. Responses to teacher's requests on sharing thoughts or solutions will be rewarded, e.g., 1-2 points towards homework grades.

Topical Outline: Adjustments to this schedule are possible during the semester. The instructor will strive to be informative and fair regarding any changes.

Topic	Reading
Set theory and probability review (3 week)	Appendix A, Abramovich & Ritov; Chapters 1-4, Casella and Berger
Sufficient, ancillary and complete statistics (1 week)	Chapter 1, Abramovich and Ritov; Section 6.2, Casella and Berger
Point estimation (3 weeks)	Chapter 2, Abramovich and Ritov; Chapter 7, Casella and Berger
Mid-term Exam	

Hypothesis testing and interval estimation (3-4 weeks)	Chapter 3 & 4, Abramovich and Ritov; Chapter 8 & 9.2, Casella and Berger
Asymptotic theory (3 weeks)	Chapter 5, Abramovich and Ritov; Sections 5.5.1 5.5.3, 5.5.4, 10.1.1, 10.1.2, 10.3.1 and 10.4.1, Casella and Berger
Bayesian inference (2 weeks)	Chapter 6, Abramovich and Ritov; Section 1.2.3 and 8.2.2, Casella and Berger
Decision Theory (1 week, depending on availability of time)	Chapter 7, Abramovich and Ritov
Final Exam	

Statement of University's Honesty Policy: At the University of Florida, each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior. Students are expected to act in accordance with the University of Florida policy on academic integrity (see Student Conduct Code, the Graduate Student Handbook or this web site for more details**: http://www.dso.ufl.edu/sccr/**).

Academic integrity: Students are encouraged to discuss the material with other members of the class on homework and other assignments. However, the following is NOT allowed:
- Have another person complete any assignment in this course
- Copy another student's work on any assignment in this course
- Use materials provided by a previous student in the course for any purpose

Policy Related to Class Attendance: Class attendance is mandatory. Excused absences follow the criteria of the UF Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. UF rules require attendance during the first two course sessions. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students should read the assigned readings prior to the class meetings, and be prepared to discuss the material except for the first class session.

Classroom etiquette: Please come to class on time and be prepared to stay until the time scheduled as the end of class. Pagers and cell phones should not be used in class. The use of cell phones, text messaging, and pagers is a common complaint from students. Please turn them off. Another common complaint is "side" conversations among students. Please consider that your conversation may interrupt the attention of someone seated near you. Generally, you should be speaking to the class as a whole or participating in group discussions as directed by the instructor. I welcome in-class questions. Your question will nearly always be one that other students also have.

Policy Related to Make-up Exams or Other Work: Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

Accommodations for Students with Disabilities: If you require classroom accommodation because of a disability, you must first register with the Dean of Students Office (http://www.dso.ufl.edu/). The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health: Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the University of Florida Counseling Center, 352-392-1575, or Student Mental Health Services, 352-392-1171. Visit their web sites for more information: http://www.counsel.ufl.edu/ or http://www.shcc.ufl.edu/smhs/help.shtml

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: www.health.ufl.edu/shcc

Crisis intervention is always available 24/7 from Alachua County Crisis Center: (352) 264-6789.

BUT – *Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.*

As Spring semester course syllabi development begins, please include U Matter, We Care information in your course syllabus. Student Senate Resolution 2015-138 recommends the following language for all course syllabi:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.