

BIOSTAT 601
PROBABILITY AND DISTRIBUTION THEORY
Fall 2008
(4 Credits)

When and Where:

Session 1: T/TH 1:00 pm - 3:00 pm 1112 SPH II.
Session 2: T/TH 10:00 am - 12:00 pm 1152 SPH II.
No classes on Oct 21st, Nov 27th.

Instructor and Office hours:

Session 1: Steve Qin, M4232 SPH II. Phone: 763-5965. E-mail: qin@umich.edu
Session 2: Lu Wang, M4132 SPH II. Phone: 647-6935 E-mail: luwang@umich.edu
Office Hours: Lu Wang: Tuesday 8:00 – 10:00am M4132 SPH II.
Steve Qin: Tuesday 3:00 – 5:00pm M4232 SPH II.

GSI:

Kevin He
E-mail: kevinhe@umich.edu.
Office hours: Wednesday 4:00 – 6:00pm M1236 SPH II.

Textbooks:

Statistical Inference, 2nd Edition, by G. Casella and R. L. Berger, Duxbury: Thomson Learning Inc (2002). (Required)
A First Course in Probability, 6th Edition, by S. Ross, Prentice Hall (2002).

Prerequisites:

Three terms of Calculus.

Lectures:

The lectures will cover the first five chapters in Casella and Berger, though the material in each chapter may be expanded or tailored.

Homework:

Weekly homework assignments will be handout in class on Thursdays which is due one week later. No late homework is accepted. You are encouraged to discuss homework problems with fellow students, but coping is not allowed.

Exams:

Midterm 1: Tuesday, October 7.
Midterm 2: Thursday, November 13.
Final Exam: TBA.

Grading:

Homework: 20%; Midterms: 20% each; Final exam: 40%.

Class Schedule (tentative)

			Readings (Book C.B.)
Lecture 1	09/02	Set theory	1.1
Lecture 2	09/04	Probability axioms and calculus	1.2.1-1.2.2
Lecture 3	09/09	Counting	1.2.3-1.2.4
Lecture 4	09/11	Conditional probability and independence	1.3
Lecture 5	09/16	Random variables and Distribution function	1.4-1.5
Lecture 6	09/18	Density and mass function	1.6
Lecture 7	09/23	Functions of random variables	2.1
Lecture 8	09/25	Expected values	2.2
Lecture 9	09/30	Moment and moment generating functions	2.3
Lecture 10	10/02	Differentiating under integral and Review	2.4
Lecture 11	10/07	First midterm	
Lecture 12	10/09	Discrete and Continuous distributions (1)	3.1-3.3
Lecture 13	10/14	Discrete and Continuous distributions (2)	3.1-3.3
Lecture 14	10/16	Discrete and Continuous distributions (3)	3.1-3.3
Lecture 15	10/23	Exponential families	3.4
Lecture 16	10/28	Joint and marginal distribution	4.1
Lecture 17	10/30	Conditional distributions and independence	4.2
Lecture 18	11/04	Bivariate transformation	4.3
Lecture 19	11/06	Covariance and Correlation	4.5
Lecture 20	11/11	Multivariate distributions	4.6
Lecture 21	11/13	Second midterm	
Lecture 22	11/18	Random samples	5.1
Lecture 23	11/20	Sampling from normal distribution	5.3
Lecture 24	11/25	Order statistics	5.4
Lecture 25	12/02	Convergence	5.5
Lecture 26	12/04	Generating random samples	5.6
Lecture 27	12/09	Final Review	

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Study group:

Encouraged.

Tutoring:

Contact either Nicole Fenech (fenechn@umich.edu) or Fatma Nedjari (fned@umich.edu) for potential tutors.

Library reserved material:

Textbooks and references reserved at SPH library (2nd floor of SPH II).

Academic Integrity:

The faculty of the School of Public Health believes that the conduct of a student registered or taking courses in the School should be consistent with that of a professional person. Courtesy, honesty and respect should be shown by students toward faculty members, guest lecturers, administrative support staff and fellow students. Similarly, students should expect faculty to treat them fairly, showing respect for their ideas and opinions and striving to help them achieve maximum benefits from their experience in the School. Student academic misconduct refers to behavior that may include plagiarism, cheating, fabrication, falsification of records or official documents, intentional misuse of equipment or materials (including library materials), and aiding and abetting the perpetration of such acts. The preparation of reports, papers, and examinations, assigned on an individual basis, must represent each student's own effort. Reference sources should be indicated clearly. The use of assistance from other students or aids of any kind during a written examination, except when the use of aids such as electronic devices, books or notes has been approved by an instructor, is a violation of the standard of academic conduct.