

Professor Jenny Baglivo

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Office: Maloney Hall, Room 574

Office Hours: M-W-F 10-10:40AM, 12-12:40PM,
and by appointment

Text: *Mathematical Statistics, and
Data Analysis, 3rd Edition,*
by John A. Rice,
Duxbury Press, 2007

Course webpage:
<http://www2.bc.edu/jenny-baglivo/MT427/MT427.html>

Class notes, with room to work out solutions to all class exercises and demonstrations, are located on the course webpage. The class notes are divided into 5 “notebooks” (notebook1, notebook2, . . . , notebook5). Please download “notebook1” and bring it to class on Wednesday.

We will use Version 11.1 of *Mathematica* (Wolfram Research Corp.) to support our efforts this term. I will tell you more about this during class.

MATH4427 is a calculus-based introduction to the important concepts of mathematical statistics and to data analysis. The strict pre-requisite for this course is a calculus-based introduction to probability theory at the level of MATH4426. Students are expected to have a working knowledge of introductory probability concepts, counting methods, conditional probability, discrete and continuous random variables, jointly distributed random variables, mathematical expectation, moment generating functions, the law of large numbers and the central limit theorem.

Note that concepts learned in probability theory (MATH4426) and mathematical statistics (MATH4427) are directly applied in followup courses such as MATH4480 Topics in Modern Statistics, and in courses in applied statistics given in many different departments at Boston College.

Exams, homework and grading: Your final grade will be a weighted average of two in-class exams (45%), written homework, computer assignments and class participation (25%), and a comprehensive final exam (30%).

1. *Examination schedule:*

Date:	Material from:
Monday, October 16	Text Chapters 6, 8
Monday, November 20	Text Chapters 9, 3, 10
Wednesday, December 20, 9AM	Text Chapters 3, 6, 8-11 (comprehensive)

There will be *no makeup examinations*. If you have a serious reason for missing an in-class exam, then you must let me know *prior* to the examination time. If you have a serious reason for missing the final exam, then you must inform the Dean’s office *prior* to the final exam time. (The Dean’s office will then let me know that you will miss the exam.)

2. *Homework assignments:* There will be about ten problem sets, which will include problems that you solve by hand and problems that you solve by computer. You are allowed to discuss general problem strategies with your classmates, but you must write up and submit your own work.

Homework is due at the *beginning* of the class period of the day it is due. You must *staple* multiple sheets together; ripped, folded and torn sheets will not be accepted. “Carbon copy” homeworks will *not* be graded.

3. *Class attendance:* Students are expected to come to class and to be *on time*.
4. *Policy on Cheating:* Incidents of cheating will be reported to the Dean’s office.

In the Dean’s words:

“Academic integrity is central to the mission of higher education. Please observe the highest standards of academic integrity in this course. Please review the standards and procedures that are published in the univeristy catalog and on the web, at:

<http://www.bc.edu/offices/stserv/academic/integrity.html>

Make sure that the work you submit is in accordance with university policies. If you have any questions, please consult with me. Violations will be reported to the Deans’ Office and reviewed by the College’s Committee on Academic Integrity. This could result in failure in the course or even more severe sanctions.”

Syllabus:

Dates:	Topics:	Text sections:
8: 28, 30*; 9: 1*, 6*, 8*, 11, 13, 15 <i>*Class in Campion 131</i>	Review of probability theory and transition to statistics	(Chapters 1-5), 6.1-6.4
9: 18, 20, 22, 25, 27, 29; 10: 2, 4	Estimation theory	8.1-8.5, 8.7
10: 6, 11	Hypothesis testing theory	9.1-9.6
10: 13	Additional problems	
10: 16	Class exam 1	
10: 18, 20, 23, 25, 27, 30; 11: 1	Hypothesis testing theory, continued	9.1-9.6
11: 3, 6, 8, 10	Order statistics and quantiles	3.7, parts of Chapter 10
11: 13, 15	Analysis of two samples	11.1-11.5
11: 17	Additional problems	
11: 20	Class exam 2	
11: 27, 29; 12: 1, 4*, 6*, 8* <i>*Class in Campion 131</i>	Analysis of two samples, continued	11.1-11.5
December 20, 9AM	Comprehensive final	

Final Note: If you are a student with a documented disability seeking reasonable accommodations in this course, please contact the Connors Family Learning Center regarding learning disabilities and ADHD, or the Disability Services Office regarding all other types of disabilities, including temporary disabilities. Advance notice and appropriate documentation are required for accommodations.