

# MATH 7342 - Mathematical Statistics

## Spring 2010

### Course Information

<b>Course:</b>	MATH 7342
<b>Instructor:</b>	<a href="#">Adam Ding</a>
<b>Time and Place:</b>	Tuesday, Thursday 7:30-9:00, 509
<b>Office Hours:</b>	TBA
<b>Prerequisites:</b>	None
<b>Textbook:</b>	Theory of Point Estimation, 2nd Ed. by E. Lehmann and G. Casella Springer, c1998.

### Course Description

MATH 7342 is a basic introductory course for mathematical statistics for graduate students. The emphasis is on providing the students with a firm mathematical foundation of statistical concepts and methods. This course provides an overview of the most commonly used basic mathematical skills for developing new statistical methods.

Topics include

1. Properties of exponential families (Section 1.3);
2. Data reduction through sufficient and complete statistics (Section 1.5-1.7);
3. Find estimators with finite sample optimality: UMVUEs and Information bound (Chapter 2);
4. Equivariant estimators (Chapter 3);
5. Bayes estimators (Chapter 4);
6. Minimavity and Admissibility (Chapter 5);
7. Find estimators with large sample optimality: asymptotic theory (Chapter 6);
- 8.\* Hypothesis testing.

These are lists of topics to be covered, but may not in the order to be taught

## **Grading Policy**

There will be homework assignments generally due every one to two weeks. The course grade will be the weighted average of all homework. There is no exam. However, at the midpoint and the end of the semester, there will be homework assignments that cover all topics taught up to that time.

[Department of Mathematics](#)  
[Northeastern University](#)

Office: 439 Lake Hall  
Phone: (617) 373-5231

Boston, MA, 02115