

## Statistical Theory – Syllabus

- **Instructor:** Jing Wang

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- **Lectures:** M W F at 11:00 - 11:50 a.m., Room E112 LCE
- **Office Hours:** M F at 12:00 - 1:00 p.m. and Tu 4:00-5:00 p.m.
- **Textbook:** R. V. Hogg, J. W. McKean, A. T. Craig, *Introduction to Mathematical Statistics*, 6th edition, 2005
- **Dates of Homework and Exams:**

Homework	Wednesdays
Midterm I	11 - 12 p.m., Feb. 20
Midterm II	11 - 12 p.m., April 9
Final Exam	8 - 10 a.m., May 8

- **Make-up Exam:** No makeup exam will be given without a valid excuse.
- **Grading:** Homework 20%, midterms 20% each, final 40%
- **Credits Scale:** 95% A , 85% B , 75% C , 65% D
- **Note:** The “closed book and notes” exams will contain questions concerning lecture material, homework problems, and class discussions.
- **Important Dates:**

January 14	Monday. Instruction begins.
January 21	Martin Luther King, Jr., Day holiday. <i>No classes.</i>
January 25	Friday. Last day to late register, last day to add a course.
February 22	Friday. Deadline for dropping courses (All colleges)
March 24–28	Spring vacation. <i>No classes.</i>
May 2	Friday. Instruction ends.
May 5–9	<b>Final Examinations</b>

## Lecture Schedule

WEEK	SECTIONS	BRIEF DESCRIPTION
01/14 - 01/18	5.1; 5.2	Sampling; Order Statistics
01/21 - 01/25	Holiday; 5.4; 5.5	Confidence Interval; Hypothesis Testing;
01/28 - 02/01	5.7; 5.8; 6.1	Chi-square Test; Monte Carlo; Maximum Likelihood Estimation
02/04 - 02/08	6.1; 6.2	Rao-Cramér Lower Bound and Efficiency
02/11 - 02/15	6.3; 6.4; 6.5	Maximum Likelihood Tests; Multiparameter Case: Estimation & Testing
02/18 - 02/22	Review; <b>Midterm-I</b> ; 7.1	Measures of Quality of Estimators
02/25 - 02/29	7.1; 7.2	Sufficient Statistic;
03/03 - 03/07	7.2; 7.3; 7.4	Properties of Sufficient Statistic; Completeness and Uniqueness;
03/11 - 03/15	7.5; 7.7	Exponential Class of Distributions; Case of Several Parameters;
03/18 - 03/22	7.7; 7.8; 7.9	Minimal Sufficiency and Ancillary Statistics; Sufficiency, Completeness and Independence
03/24 - 03/28	Spring Break	No classes.
03/31 - 04/04	8.1; 8.2	Most Powerful Tests; Uniformly Most Powerful Tests
04/07 - 04/11	Review; <b>Midterm-II</b> ; 8.2	Uniformly Most Powerful Tests;
04/14 - 04/18	8.3	Likelihood Ratio Tests;
04/21 - 04/25	8.3; 11.2	Bayesian Procedures;
04/28 - 05/02	11.2; Final Review	Bayesian Procedures;
05/03 - 05/09	Final Week	Final Exams.

The instructor reserves the right to make any changes in the course she determines academically advisable. Changes will be announced in class. It is your responsibility to keep up with any changed policies.