

Course: STAT 6223-10  
Semester: Spring 2024  
Time: Thursday, 3:30- 6  
Location: Rome 202

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Office hours: TR 12:40-1:40 or by appointment

### **COURSE DESCRIPTION**

This is a course on Bayesian theory and methods. It is an overview of Bayesian statistics, starting with a discussion of why one would use Bayesian methods. The course includes theory and applications, and is meant for a person with some theoretical statistics background.

Course topics include foundational issues -- the likelihood principle and the Bayesian approach, conjugate priors and non-informative priors, Bayesian estimation, Bayesian testing of hypotheses and the Bayes factor, robustness of Bayesian analyses, and computational issues.

**COURSE PREREQUISITES:** Stat 6201-6202

### **TEXT**

Statistical Decision Theory and Bayesian Analysis, 2nd edition,  
by James O. Berger, Springer.

### **LEARNING OUTCOMES**

You will learn

- the importance of prior information in inference problems
- problems and issues in classical inference
- conditional risk and integrated risk principles
- Bayesian estimation principles
- Bayesian hypothesis testing approaches and the Bayes factor
- about robustness issues and approaches in Bayesian analyses.

### **GRADES**

The overall grade is made up of

Quizzes	10%
HW	40%
Final	50%

AS PER UNIVERSITY POLICY, THE FINAL EXAM WILL BE GIVEN DURING THE FINAL EXAM PERIOD AND NOT THE LAST WEEK OF THE SEMESTER

University Policy on Religious Holidays:

You may find the University Policy on Religious Holidays at:

<http://www.gwu.edu/~regweb/web-content/policies.html>

### **ACADEMIC INTEGRITY**

I personally support the GW Code of Academic Integrity. It states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see:

<http://www.gwu.edu/~ntegrity/code.html>

### **SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM**

#### *DISABILITY SUPPORT SERVICES (DSS)*

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <http://gwired.gwu.edu/dss/>

#### *COUNSELING AND PSYCHOLOGICAL SERVICES 202-994-5300*

Counseling and Psychological Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals

<https://healthcenter.gwu.edu/counseling-and-psychological-services>

**PLEASE TURN OFF YOUR CELL PHONE OR SET IT TO VIBRATE.**

### **Blackboard**

Check Blackboard frequently. Important class information is posted on Blackboard.

#### **Average minimum amount of independent, out-of-class, learning expected per week:**

During the semester students have lecture and out-of-class learning the final, and preparation for the final. Students will spend 2.5 hours (150 minutes) per week in lecture. Homework and other out-of-class work is estimated at around 300 minutes per week.