

# STA 6934 Applied Bayesian Analysis – Fall 2012

**Meeting Time:** T 2-3 (08:30) and R 3<sup>rd</sup> (09:35) period in FLO 230

**Instructor:**

Demetris Athienitis ([dathien@stat.ufl.edu](mailto:dathien@stat.ufl.edu))

**Office:** Griffin Floyd 116B,

**Phone:** 352 – 273 – 2972

**Course Web Address:** <http://www.stat.ufl.edu/~dathien/sta6934B.html>

**Office Hours:** Office Hours subject to change and will be posted on the course website

**Course Description:**

Bayesian methods are gaining increasing popularity in the theory and practice of statistics. The objective of this course is to introduce the students to some of the basics of Bayesian methods. We will also show a variety of applications of these methods. There will be many examples and exercises to illustrate the main points. We will also discuss Bayesian model diagnostic issues as well as aspects of Bayesian computing.

**Course Materials Required:**

*Bayesian Data Analysis 2<sup>nd</sup> Edition* by Gelman, Carlin, Rubin [ISBN-10: 158488388X ]

**Statistical software:**

The class will be using R with a possibility of also using WinBUGS at some point.

**Homework and Quizzes:**

There will be about 4 – 5 problems assigned about every two weeks of which one will be chosen to be solved as a **5-10 minute quiz on Tuesdays** in class .

**Exams:** There will be three (3) exams,. Dates will be decided in class. The UF scheduled final is December 10<sup>th</sup> 17:30 but an earlier date may be chosen if convenient for the whole class, such as last day of class on December 5<sup>th</sup>.

If a student is unable to take an exam at the scheduled time, they must notify the instructor as early as possible. If an emergency situation precludes an advance arrangement, you should let the instructor know within 24 hours of the missed exam. Each case will be reviewed individually. You will be required to provide official documentation to be eligible for make-up examination.

**Grades:**

Each 25% and 25% for quizzes/projects.

**Grading Scale:**

The grading scale will be as follows:

A:	92-100%,	A-:	88- <92%,		
B+:	84- <88%,	B:	80- <84%,	B-:	77- <80%,
C+:	74- <77%,	C:	70- <74%,	C-:	67- <70%,
D+:	64- <67%	D:	56- <64%	D-:	50- <56%
E:	<50%				

To see the effect of the + and – grades on your GPA, look at the following link:  
<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

**Course Policies:**

**Academic Dishonesty:** I adhere to the University of Florida rules and guidelines for handling instances of academic dishonesty. Please refer to the Office of Students Services for detailed information about the current policies.

**Instructor's Honor Code:** We the members of the University of Florida community pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

**Grading:** Grades will be changed only when an error has been made by the instructor.

**Incomplete:** Incompletes are only assigned when extraordinary circumstances, arising after the date for dropping off the course, prevent the student from completing the course requirements. The student must be currently passing the course and discuss the circumstances with the instructor before the final exam takes place. Having a failing grade in the course is not a valid reason for requesting an incomplete.

**Getting Help:** Students may ask questions during the lectures (preferred) or the office hours. The TAs will answer questions during office hours. A list of private tutors (if needed) may be obtained from the Statistics Department Secretary in Griffin Floyd 103.

**Students with disabilities:** Students requesting classroom accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the students who must then provide this documentation to the instructor when requesting information.

**Privacy Policies:** Student records are confidential. Only information designated "UF directory information" may be released without your written consent. UF views each student as the primary contact for all communication. If your parents contact me about your grade, attendance or other information that is not "UF directory information", I will ask them to contact you.

**Course Outline:**

1. An Introduction to the Bayesian Paradigm
2. One-parameter Models
3. Multi-parameter Models
4. Bayesian Methods in Finite Population Sampling
5. Hierarchical Models
6. Bayesian Computations
7. Model Diagnostics
8. Application

The instructor reserves the right to update any parts of this syllabus as necessary. Students will be notified of any changes.

**Other Important Dates:**

November 19<sup>th</sup> Drop or Withdraw Without Failing

**There will be no classes on the following days:**

September 3 <sup>rd</sup>	Labor Day
November 9 <sup>th</sup>	Homecoming
November 12 <sup>th</sup>	Veterans Day
November 21-24 <sup>th</sup>	Thanksgiving