STAT 406-01: Mathematical Statistics II

Syllabus and Course Information – Spring 2016

2016 January 26

Course Information

Lectures:
TR 9:30am-10:45am, BRN(86)-1100, beginning 2016 January 26 and ending May 12.

Holidays (no lecture):
March 22 & 24: Spring Break.

Instructor:
Dr. John T. Whelan; LAC(74)-2063, 475-5083; `jtwsma@rit.edu` or `john.whelan@astro.rit.edu`
Office Hours: TR 11am-11:50am & 2pm-2:50pm, or by appointment. (Please email to make an appointment.)

Course Website: `http://ccrg.rit.edu/~whelan/STAT-406/`

Required Textbook:

- Hogg, R. V., McKean, J. W., and Craig, A. T., *Introduction to Mathematical Statistics*, 7th edition (Pearson, 2013)

Other Useful Resources:

- Casella, G. and Berger, R. L., *Statistical Inference*, 2nd edition (Brooks-Cole/Cengage, 2002)
- Jaynes, E. T., *Probability Theory: The Logic of Science* (Cambridge, 2003)

Prerequisites:
Mathematical Statistics I (COS-STAT-405)

Course Outline:
`https://www.rit.edu/science/sites/rit.edu.science/files/COS-STAT-406-MathematicalStatisticsII.pdf`

Scope of Course:
The course will cover most of chapters 6-8 and 11 of Hogg et al, including the following topics:

1 Bayesian Approach and Methods
2 Maximum Likelihood Methods
3 Sufficiency
4 Optimal Tests of Hypotheses

A tentative timetable for the pace of the course (**subject to change**) is at
`http://ccrg.rit.edu/~whelan/courses/2016_1sp_STAT_406/calendar.html`

Homework and Problem Sets:
Students are expected to read the relevant sections of the text *before* each class, to be prepared for class discussions.

Additionally, about once per week, there will be a problem set due, which should be written up neatly and handed in on the due date. Problem sets will not be accepted after solution sets have been distributed.

Exams:
Two preliminary exams, in class, **tentatively** planned for Tuesday, Mar. 1 and Tuesday, Apr 12.
Final exam (cumulative) TBA.

Email List: `discuss-statistics-whelan@lists.rit.edu`
This is the same list as was used for Mathematical Statistics I last semester, so you should all already be subscribed to it. You can edit your settings via
`https://lists.rit.edu/mailman/listinfo.cgi/discuss-statistics-whelan`

All students are expected to be subscribed to the course email list from address which they read frequently, as organizational announcements may be sent there. Students are also encouraged to use the email list to discuss concepts and issues related to the course.

I will also use the email list to respond to student questions, so that the entire class can benefit from the exchange. If you email me a question which you don't want shared with the class, you must specify that explicitly in the email. (Similarly, if you want to ask a question anonymously, specify that you'd like your name left out of any reply posted to the email list.)

Course Policies

Attendance and Class Participation:
All students are expected to attend and participate in class discussions. This entails not only attending class, but being prepared for class by having read the relevant sections of the textbook.

Exam Attendance:
Makeup exams will only be granted in extreme circumstances. Unless you have a documentable emergency or an illness which requires medical attention, you should not expect to be able to make up a missed exam. If you do have a serious illness or emergency, please contact me as soon as possible.

Class Disruptions:
Please try to avoid disrupting the class by arriving late and/or leaving early. Please switch off or silence all mobile devices if possible. In case of an urgent need to be reachable during 75 minutes of lecture (on-call EMT, critically ill loved one, etc.), please use silent/vibrate mode.

Collaboration:
Collective brainstorming is a time-honored tool of scientists attacking a problem, be they freshmen or tenured professors. That said, working through the homework problems is an important aid to gaining mastery of the material, and a student who simply transcribes the solution of another student or of the group will likely have trouble come exam time. In light of this, solutions which are clearly (in my judgement) transcriptions from other sources or from each other will receive reduced or no credit. You should use outside sources or group discussions as needed to get the idea of how to do a problem, then go off and write up your own solution.

Additionally, in the interest of learning proper academic procedures, you should acknowledge any outside help you get on homeworks, whether from other students or from references outside the textbook.

Working together on exams or copying off of someone else's test is of course cheating and will not be tolerated.

Grades:
Grades will be based on the following components:

5%	Class Participation
20%	Problem Sets
20%	First Prelim Exam
20%	Second Prelim Exam
35%	Final Exam

Your score on each component of the course (each prelim, the final, all the homeworks together, and class participation) will be converted to a numerical "grade point" score, and the weighted average of those five scores will be your final grade, converted to a letter grade according to the scale below.

Grading Scale:

A	3.83–4.5	C+	2.17–2.5
A-	3.5–3.83	C	1.83–2.17
B+	3.17–3.5	C-	1.5–1.83
B	2.83–3.17	D	0.5–1.5
B-	2.5–2.83	F	(−0.5)–0.5

Special Arrangements for Students with Disabilities:
Students with disabilities who wish to receive accommodations in this class should contact the Academic Accommodations Office at 475-2023 or via their website
`http://www.rit.edu/studentaffairs/disabilityservices/accommodations.php`
as soon as possible so that warranted accommodations can be implemented in a timely fashion. The Academic Accommodations Office is located in SAU(04)-1150.