

**STAT 451 Statistics Methods II**  
**Spring 2017,**  
**MWF 10:10-11:00, Math 211**

**Course Information**

- **Instructor:** David Patterson, Math 208, 243-6748, [david.patterson@umontana.edu](mailto:david.patterson@umontana.edu)
- **Office Hours:** See Moodle page.
- **Prerequisites:** Stat 451 or equivalent.
- **Textbook:** Stats: Data & Models, 4<sup>th</sup> ed., by DeVeaux, Velleman, & Bock. This will be supplemented by notes and other handouts.
- **On-line homework:** I will post optional assignments on MyStatLab for the first part of the course. These will count as 1/5 of your homework grade if they help you. Course ID is patterson32646. Instructions for accessing MyStatLab are on Moodle.
- **Software:** Assignments will require the use of R Studio and R Markdown.
- **Computer lab:** Stat 458 is an optional 1-credit course. The instructor is Quy Cao.

**Catalog description**

Continuation of STAT 451. Multiple regression, experimental design, analysis of variance, other statistical models.

**Learning Outcomes :**

1. To understand multiple linear regression, model building, and associated normal-based inference procedures.
2. To understand analysis of variance and to carry out analyses of variance for a variety of experimental designs, including completely randomized and randomized block designs.
3. To understand the assumptions behind standard statistical inference procedures for linear regression and analysis of variance.
4. To gain exposure to a wide variety of applied problems, and understand how statistical methods were used to answer specific scientific questions.
5. To carry out analyses of real data sets and communicate the results in written form.

**Topics**

We will cover chapters 23-30 in the textbook, and then proceed to additional material on multiple regression, design of experiments and generalized linear models.

**Important dates:**

- **Tuesday, January 31:** last day to add courses by Cyberbear.
- **Fri, February 10:** last day to drop classes or change grading option by Cyberbear.
- **Monday February 20:** Presidents' Day holiday.
- **March 20-24:** Spring break.
- **Monday, April 3:** last day to drop course or change grading option. Requires paper form signed by advisor and instructor. Changes after this date are only in exceptional circumstances.
- **Friday, May 5:** last day of classes.

**Grading (+/- grading will be used):**

- **Homework:** 40%
- **Midterm Exams 1,2:** 20% each. Tentative dates are **Wed, March 1** and **Wed, Apr 12** in late afternoon/early evening. Makeups are given at instructor's discretion and only in cases of emergency or other important circumstances. If you cannot make it to an exam, you must let me know BEFORE the exam is given.
- **Final Exam** 20%. **Monday, May 8, 10:10 – 12:10.** The final will not be given early.

**Incompletes**

Incompletes are given at the discretion of the instructor and are only considered in cases where the student has been in attendance and doing passing work up to three weeks before the end of the semester, and for reasons beyond the student's control and which are acceptable to the instructor, the student has been unable to complete the requirements of the course on time. Negligence and indifference are not acceptable reasons.

**Students with disabilities** may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications.

**Academic Honesty**

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary action by the University. All students need to be familiar with the Student Conduct Code. You can find it in the A-Z index on the UM home page or at [www.umt.edu/vpsa/policies/student\\_conduct.php](http://www.umt.edu/vpsa/policies/student_conduct.php).