Spring 2012

EIND 454 – Engineering Probability and Statistics II

Instructor: William Schell, PhD, PE

Office Hours: Roberts Hall 403, MWF 9 – 10 and W 1 – 2, and by appointment.

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General Course Information

Website: http://www.coe.montana.edu/ie/faculty/schell/teaching/eind454/

Meeting Time: MWF 12:00 – 12:50

Meeting Location: Roberts 307

Description: Identification, characterization, and analysis of variation in engineering data. Includes inferential statistics, goodness of fit, applications of non-parametric statistics, curve fitting, regression, and the design of engineering experiments. A team design project is required.

Prerequisites: EIND 354 and EIND 355


Etiquette and Attendance: All members of the class are expected to conduct themselves professionally at all times. Key components of professional behavior include arriving on time, engaging in course discussions, and not adding distractions to class. Class attendance is not mandatory, however, class members are expected to be present when attending and are expected to know all course materials regardless of attendance. MSU Student Conduct Guidelines can be found at www2.montana.edu/policy/studentconduct

Objectives: Students develop an understanding of applied statistical techniques and how they can be utilized for problem solving through testing, modeling, and data analysis, in the following areas:

1. Applying Hypothesis Testing for engineering decision making.
2. Solving single and multivariate problems through Single and Multiple Regression
3. Designing solutions to engineering problems through Analysis of Variance and Design of Experiments techniques.

Students will gain hands on experience in many of these techniques through an in depth team based capstone project.
Grading and Evaluation

**Grading Scale**: Grades will be earned based on performance against the following cut offs:

- A: 92
- A-: 90
- B+: 88
- B: 82
- B-: 80
- C+: 78
- C: 72
- C-: 70
- D+: 68
- D: 60
- F: Below 60

**Graded Assignments**: The final course grade will be earned through performance on the following set of assignments:

- **Homework**: 10% - homework will be assigned in most class periods
- **Exams (4)**: 50% - four full period exams
- **Course Project**: 15%
- **Final Exam**: 25%

*Note* - The grading scale presented above represents the guaranteed grade a student will earn if these performance levels are met. Final grades may be curved, or additional opportunities to earn course points presented, if determined necessary by the instructor.

**Late Assignments**: Homework is due at the beginning of the class period after it was assigned. Late assignments will be accepted up until the next class period begins, but will be penalized 20%. Exams must be taken during the scheduled time period. Make up exams are allowed only for unanticipated and approved absences.

**Exams**: Students will generally have the entire period to complete exams. Students may utilize a hand written single side of one 8.5 x 11” sheet of paper for each exam, and any non-communicating calculator of their choosing (unless otherwise noted). The final exam will be comprehensive in nature and will take place during the common hour exam period assigned by the university. Students may utilize both sides of two hand written 8/5 x 11” sheets of paper for the final exam.

**Grade Corrections**: Adjustments will be made to the score of a graded assignment only when a grading error has been made. If the student believes an error was made in grading, the written request for correction must be made within 24 hours of the assignment being returned and include the original graded material.

**Course Communications**

Assignments and other key information regarding this course will be published to the course website immediately after the class period in which it was assigned. The course listserv will be utilized for any reminders, and / or to draw student’s attention to any new materials (e.g. corrections) published to the website. As noted above, the instructor is available outside of office hours.