Instructor: William Schell, PhD, PE

Dedicated Office Hours: Roberts Hall 403, MWF 10:00 –11:00

Open Door Policy: Knock first and enter, closed 30 minutes before classes.

Email: wschell@ie.montana.edu | Office: 406.994.5938 | Cell / Text: 406.224.0857

Getting in contact with me should be easy, I am usually in my office during the day and available, just knock. Although I am not available between 5 – 8 evenings, I generally see and respond to emails, texts or voicemails (left on my cell phone) after 8:00 Mon – Thur. Spring semester is a heavy research focus for me, so I will be out of the office more than normal on TR, if you cannot find me, email or call.

General Course Information

Website: montana.edu/wschell/teaching/eind477/ and Desire2Learn

Meeting Time: MWF 9:00 – 9:50

Meeting Location: Roberts 312A

Description: Statistical and non-statistical aspects of quality assurance assessment. Includes classical SPC and process improvement via control charts. Also includes product and process design through planned experimentation and simple experimental designs (ANOVA). Limited use of case studies. A design project or course capstone paper demonstrating significant elements of the course is required.

Prerequisites: EIND 354 or EGEN 350 or consent of instructor.

Textbooks:


The Yellow Belt Memory Jogger, Basala. ISBN: 978-1-57681-173-3

Etiquette and Attendance: Class attendance is not mandatory. Class members are expected to be present when attending and are expected to know all course materials regardless of lecture attendance. In this course we will occasionally be working on computers as an entire class and in small groups. This is a time to work with specific software applications, or make forward progress on a mini-project, not the time to check your personal email, Facebook, etc. Further expectations per MSU Student Conduct Guidelines at montana.edu/policy/student_conduct/

Course Philosophy and Material Delivery: While this is not a Six Sigma course, we will utilize the Design, Measure, Analyze, Improve, Control (DMAIC) framework to present Quality Assurance (QA) tools throughout the course. QA approaches provide a powerful set of tools for making our world a better place, but can also be dry and abstract. My goal is to make them more interesting and useful by providing you more hands on opportunities and periodically time to work on cases and small projects in teams during class (with my guidance). In order for that to be successful, you must be more active in learning the material by reviewing readings outside of class, watching any videos posted to D2L, completing work on time, etc.
**Learning Outcomes:** At the end of this course students who learn the material will be able to:

1. Critique various approaches to quality improvement.
2. Plan how to acquire and work with data in order to solve quality problems.
3. Solve quality problems utilizing various quality improvement tools including root cause analysis, statistical and spreadsheet software, design of experiments, etc.
4. Apply control charts and other tools to ensure that improvements are maintained.
5. Understand the quality professional certifications and their value in the market.
6. Compose solutions to quality improvement problems using course concepts.

**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:

- **Homework,** Case Studies, and Mini Projects (30%) – Assigned weekly
- **Exams (45%)** – three exams at 15% each
- **Comprehensive Final Exam (25%)**

1. 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.

2. Each semester I find more and more students with access to the instructor’s manual. If at any time during the semester there is evidence of a student cheating on homework in this or any other way, the minimum action taken is that they will earn a 0 on the entire homework portion of their course grade.

**Late Assignments:** Homework is due at the beginning of the class period on the assignment deadline. 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 have the entire period to complete exams. Students may utilize *The Yellow Belt Handbook*, a hand written (in ink) single sided 3 x 5” note card 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 final exam period assigned by the university. Students may utilize *The Yellow Belt Handbook*, four single sided note cards, and their calculator during 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 Brightspace (D2L). 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 D2L.