

Statistics 998 Spring 2018 Yandell Statistical Consulting

Institution Name: University of Wisconsin-Madison

Course Subject, Number and Title: **Statistics 998 Statistical Consulting**

Credits (#): 3

Canvas Course URL: <https://canvas.wisc.edu/courses/88442> (probably not used)

Course Web Page: <http://pages.stat.wisc.edu/~yandell/st998/>

Course Designations and Attributes: NA

Meeting Time and Location: Tuesday/Thursday 11am-12:15pm 1210 MSC

Instructional Mode: face-to-face

Specify how Credit Hours are met by the Course: 3 hour per week contact plus 6 hours outside preparing for in-class presentation.

Instructor Title and Name: Professor [Brian Yandell](#)

Instructor Availability: Yandell is available after class (12:15-1:15), by appointment or email

Instructor Email/Preferred Contact: brian.yandell@wisc.edu

Teaching Assistant: NA

Course Description: Statistics 998 is designed to give students practical experience in statistical consulting so that the successful student is well prepared to pass the masters exam and to work effectively as a statistical consultant. Statistical consulting is more than applied statistics. It also involves written and oral communication, problem solving, the connection between science and statistics, study design, data analysis, issues in data collection, practical aspects of consulting management, and ethics. Students in Statistics 998 are expected to attend class regularly and to participate in discussion and class activities. Early in the semester, there will typically be short assignments due each class period. Later in the semester, there will be longer projects involving full consulting problems.

Requisites: For students in Statistics MS or PhD Programs (except MS Option Data Science).

Learning Objectives: By the end of the course, the successful student will be able to:

1. identify the key questions that a client has;
2. understand what data the client has available to address the key questions;
3. produce effective graphical displays of data that shed light on the key questions;
4. understand how the data has been collected and how this might affect inference;
5. find an appropriate statistical framework to analyze the data in order to address the scientist's key questions;
6. use appropriate statistical methods for the data and study design;
7. interpret the results of a statistical analysis in a context that addresses the client's question;
8. explain the results of a data analysis in language the client understands;
9. to write reports that integrate reproducible data analysis.

The student who has mastered these skills will be prepared to pass the masters exam and will be prepared to work in many jobs as a data analyst and statistical consultant.

Grading: The three major data analyses (2 with whole class, one file individual) each count for 25% of the course grade. All other assignments together count 25%. Improvement over the semester is viewed favorably in grading.