

Module Assisted Statistics Courses

By

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This project began as an attempt to deliver a course in quantitative methods entirely by modules. These units would contain basic lectures, applications to be used in this course and again in later business courses, review units for standard topics to be used as needed, and motivational or challenge topics to be selectively used in the course.

The project has evolved into the development of supplementary modules to be used with a standard text to deliver courses in business statistics and quantitative methods. These units would improve the delivery of these courses, but a standard text would enhance the course with a wealth of background material and problems.

Below is a listing of modules that have been developed at this time:

1. The Birthday Problem
2. Introduction to Decision Analysis---A Challenge Problem
3. The Monty Hall Paradox
4. A Medical Diagnosis Problem
5. Randomized Response Surveys
6. Organization of Data I
7. Organization of Data II
8. Organization of Data III
9. The Exponential Distribution
10. Applications of the Exponential Distribution
11. Graphical Approach to Linear Programming
12. Computer Solutions for Linear Programming Problems
13. Introduction to Decision Theory
14. Decision Trees
15. Bayes Theorem for Decision Theory
16. Decision Theory Applications for Bayes Theorem
17. Utility Theory
18. Introduction to Correlation and Regression

Many of these units began as class examples or part of class lectures and evolved into useful units with follow-up problems for homework.

Over the past four months I have visited with colleagues at several universities and have invited them to join in this project. The payoff will be a large set of units that will be helpful to all of us in our teaching of basic statistics and quantitative analysis. At the next stage we would take each

other's modules and modify or revise them to better serve our own needs. Presently, seven colleagues have joined me in this effort and others have shown interest.

With other partners joining the project we will all gain favorite presentations of difficult topics, interesting data sets with analysis, interesting applications, and carefully written review units. The careful and complete development of these units will add depth and clarity to presentations of topics that can be difficult to grasp or that are only superficially covered in standard textbooks.

Also, we have found that collaboration with colleagues in business (or other application areas) has improved our communication, has helped develop a mutually satisfactory notation, and has fostered better working relations with these departments. Previous lack of communication has penalized students at my university with needless repetition of the same topics in different courses. Also, with a common understanding of what we are doing we can provide appropriate applications in statistics to make more advanced applications possible at the next level.

If you are interested in this project, please contact me by e-mail (gramsw@erau.edu) so we can begin a dialog and work together in the development and use of modules.