



Expanding Opportunities in a Statistics Capstone Course

LISA W. KAY, EASTERN KENTUCKY UNIVERSITY

USCOTS 2021 VIRTUAL CONFERENCE

POSTER SESSION, JUNE 30, 2021

Background

Original Statistics Capstone, STA 498

- ▶ One-credit-hour course
- ▶ Typically taught jointly with Mathematics Capstone
- ▶ Often taught by mathematics faculty

Motivation for Converting Capstone to Three-Credit-Hour Course, STA 498W

- ▶ Assessment needs
- ▶ University writing requirement
 - ▶ <https://academicaffairs.eku.edu/writing-intensive-courses>
- ▶ Institutional requirement in Applied Critical and Creative Thinking (ACCT)
 - ▶ <https://catalogs.eku.edu/sites/catalogs.eku.edu/files/files/Undergraduate%20Catalog%2020-21.pdf> (p. 46)
- ▶ Desire to differentiate senior experiences for statistics and mathematics majors

First Offering of Updated Course in Fall 2020

- ▶ Resume and interview sessions with representative from Office of Academic and Career Services
- ▶ Research skills session with librarian
- ▶ Guest speakers
- ▶ Special topic discussions
- ▶ Mock consultation

Examples of Discussion Topics

- ▶ Careers
- ▶ Graduate school
- ▶ Visualization
- ▶ History of statistics
- ▶ Ethics
- ▶ Randomization-based methods
- ▶ Bootstrap confidence intervals
- ▶ Survival analysis
- ▶ Cluster detection
- ▶ Cluster analysis
- ▶ Poisson regression
- ▶ Bayesian statistics

Course Requirements

- ▶ Research Paper Version 1
- ▶ Research Paper Final Version
- ▶ Research Presentation
- ▶ Consulting Project Report Version 1
- ▶ Consulting Project Final Version
- ▶ Consulting Project Presentation
- ▶ Mock Job Interview
- ▶ Attendance at Professional Presentations
- ▶ Mini-Projects
- ▶ Daily Assignments
- ▶ Class Activities
- ▶ Special Topics Exam

Technology

▶ Mini-Projects

- ▶ Datawrapper
- ▶ Plotly
- ▶ Piktochart
- ▶ JASP
- ▶ RAWGraphs
- ▶ Flourish

▶ In-class Sessions

- ▶ Equation editor in Word
- ▶ LaTeX
 - ▶ <https://www.overleaf.com/>
- ▶ Microsoft Access
- ▶ SQL
 - ▶ <https://mode.com/sql-tutorial/>
- ▶ Python
 - ▶ <https://mode.com/sql-tutorial/>

Recommendations

- ▶ Guest speaker selection
- ▶ Depth versus breadth in special topics
- ▶ Enhancement of research skills
- ▶ Consulting content
- ▶ Metacognitive approaches
- ▶ Incorporation of transparency
- ▶ Data science content

Questions?

- ▶ USCOTS Poster Session, Wednesday, June 30th
- ▶ Email: Lisa.Kay@eku.edu