Data Science at American University

Jane Wall

April 30, 2019
Undergraduate Minor in Data Science

- Calculus 1 (MATH 211 or 221)
- Basic Statistics (STAT 202 or 203)
- Intermediate Statistics (STAT 302 or 320)
- Statistical Programming in R (STAT 412)
- Data Science (STAT 413)
- Regression (STAT 415) or Statistical Machine Learning (STAT 427)

Consider BS/MS option and take STAT 612, 613, 615 and apply those courses to both degrees - leaving only 21 hours needed for the MS
BS in Data Science (proposed) 48-50 hours

- Required for all tracks (23 credit hours)

  - STAT 202 Basic Statistics
  - CSC 280 Introduction to Computer Science I
  - STAT 302 Intermediate Statistics
  - STAT 412 Statistical Programming in R
  - STAT 413 Data Science
  - STAT 415 Regression
  - STAT 427 Statistical Machine Learning

- Application area track courses (25-27 hours)

  - Business, Computational Science or Statistics
  - Others TBD
BS in Data Sciences for Justice, Law and Criminology

Joint between SPA and CAS - approved, starts Fall, 2019

47 hours total major requirement

- Required - (35 hours)

- CSC 280 Intro to Computer Science I
- CSC 480 Introduction to Data Mining
- STAT 202 Basic Statistics
- STAT 302 Intermediate Statistics
- STAT 412 Statistical Programming in R
- STAT 413 Data Science
- JLC 104 Introduction to Systems of Justice
- JLC 205 Introduction to Criminology
- JLC 280 Introduction to Justice Research
- JLC 281 Introduction to Legal Studies Research
- JLC 437 Measurement of Crime

- Electives (9 hours) from long list of 3xx and 4xx JLC courses

- Capstone 3 hours in JLC 4xx course
BS in Data Sciences for Political Science

Joint between SPA and CAS - approved, starts Fall, 2019

44 hours total major requirement

- Required - (32 hours)

- CSC 280 Intro to Computer Science I
- CSC 480 Introduction to Data Mining
- STAT 202 Basic Statistics
- STAT 302 Intermediate Statistics
- STAT 412 Statistical Programming in R
- STAT 413 Data Science
- GOVT 110 Politics in the United States
- GOVT 210 Political Power and American Public Policy
- GOVT 310 Introduction to Political Research
- GOVT 105 Individual Freedom vs Authority
- or

- GOVT 130 Comparative Politics

- Electives (9 hours) from long list of 3xx and 4xx GOVT courses

- Capstone 3 hours in GOVT 4xx course
Graduate Data Science Programs at AU

Graduate certificate (4 courses, 3.0 GPA in any major)

Masters of Science (3.0 GPA in any major, 30 hours)

- Required for all tracks (21 credit hours)
  - STAT 614 or GOVT 653 Statistical Methods
  - GOVT 650 Political Analysis
  - STAT 612 Statistical Programming in R
  - STAT 613 Data Science
  - STAT 615 Regression
  - STAT 627 Statistical Machine Learning
  - DATA 793 Data Science Practicum

- 9 hours in application area track
- Applied Public Affairs
- Business Analytics
- Computer Science
- Cybersecurity (proposed)
- Environmental Science
- Finance (proposed)
- International Economic Relations (proposed)
- Investigative Journalism (proposed)
- Microeconomic Analysis