


Master of Science in Analytics Curriculum Outline

|  | | 1 Summer | | | | 2 Fall | | | | 3 Spring | | | |
|---|---|-------------------------------------|-------------------------------------|-----------------------------------|---|----------------------------------|-------------------------------|-------------------------------------|----------|------------------------|--------------------------------|-----------------------|----------|
| | | DATA 800 Analytics Statistics | DATA 801 Analytic Foundations | DATA 802 Analytic Methods I | DATA 803 Analytic Applications I | DATA 900 Data Architecture | DATA 901 Applications I | DATA 911 Data Driven Practice | Elective | DATA 902 Methods II | DATA 903 Applications II | DATA 912 Practicum | Elective |
| Mathematics | Linear Algebra | | X | | | | | | | | | | |
| | Matrices | | X | | | | | | | | | | |
| Statistics | Probability | X | X | | | | | | | | | | |
| | Inference | X | | | | | | | | | | | |
| | Data Exploration and Imputation | | | X | | | | | | | | | |
| | Design of Experiments | | | | | | X | | | | | | |
| | Foundations of Predictive Modelling | X | | | | | | | | | | | |
| | Time Series | | | | X | | | | | | | | |
| | Forecasting | | | | X | | | | | | | | |
| | Multivariate Techniques | X | | X | | | | | | | | | |
| | Survival Analysis | | | | | | | | | X | | | |
| | Bayesian Statistics | | | | | | | | X | | | | |
| | Programming | Python | | | X | | X | | | | | | |
| R | | | | X | | X | | | | | | | |
| SAS | | | | | | | | | | | | | |
| Machine Learning | Introductory Algorithms | | | | | X | | | | | | | |
| | Natural Language Processing | | | | | X | | | | X | | | |
| | Advanced Algorithms | | | | | X | | | | | | | |
| | Introduction to Neural Networks | | | | | X | | | | | | | |
| | Advanced Neural Networks / Deep Learning | | | | | | | | X | | | | |
| | Simulation | | | | | | X | | | X | | | |
| Computation and Systems | Computer Vision | | | | | | | | X | | | | |
| | Databases | | | | | X | | | | | | | |
| | SQL | | | | | X | | | | | | | |
| | No SQL | | | | | X | | | | | | | |
| | Mongo DB | | | | | X | | | | | | | |
| | Hadoop / Spark / Hive / Pig | | | | | | | | | X | | | |
| | AWS | | | | | | | | | X | | | |
| Operations | Customer Segmentation | | | | | X | | | | | | | |
| | Behavior Analysis | | | | | X | X | | | | | | |
| | Governance | | | | | | | | X | | | | |
| | Ethics | | | | | | | X | | X | | | |
| Translation / Tools | Storytelling with Data | | | | X | | | X | | X | | | |
| | Tableau / Power BI | | | | X | | | X | | X | | | |
| | R / Python applications | | | X | X | | | X | | X | | | |
| | GIS/QGIS | | | | | | | | | X | | | |
| Professional Skills | Presentations | X | X | X | X | X | X | X | X | X | X | X | |
| | Resume | | | | | | | X | | | X | | |
| | Digital presence | | | | X | | | X | | | X | | |
| | Interviewing | | | | | | | X | | | X | | |
| | Lean / Project Management / Sigma training* | | | | | | | | X | | | X | |
| Applied Projects | Data Science for Social Good | | | | X | | | | | | | | |
| | Sponsored | | | | | | | X | | | X | | |

* Offered via Graduate School Modules free to students