MS STATISTICS

Program Learning Outcomes
1. Demonstrate mastery of core statistical theory;
2. Demonstrate proficiency in statistical methodology and data analysis;
3. Select, justify, and apply appropriate inferential and predictive methods;
4. Responsibly interpret results and output of statistical analyses;
5. Communicate effectively (written and oral) and organize/manage projects in collaborative settings (within and between disciplines);
6. Write code for statistical applications in one or more languages;
7. Gather and manage data from a variety of sources;
8. Collaborate with researchers and clients to solve data-oriented problems that arise in other disciplines; and,
9. Conduct independent learning and research.

Required Courses
STAT 425 Probability Theory 4
STAT 426 Estimation and Sampling Theory 4
STAT 427 Mathematical Statistics 4
STAT 466 Senior Project - Statistical Consulting 4
STAT 550 Generalized Linear Models 4
STAT 551 Statistical Learning with R 4
STAT 566 Graduate Consulting Practicum 2
STAT 590 Graduate Seminar in Statistics 3
STAT 599 Thesis 8

Approved Electives
Select from the following: 1
CSC 448 Bioinformatics Algorithms
CSC 466 Knowledge Discovery from Data
CSC 477 Scientific and Information Visualization
CSC 566 Topics in Advanced Data Mining
CSC 582 Computational Linguistics
DATA 402 Mathematical Foundations of Data Science
DATA 403 Data Science Projects Laboratory
MATH 406 Linear Algebra III
MATH 412 Introduction to Analysis I
MATH 413 Introduction to Analysis II
MATH 414 Introduction to Analysis III
MATH 451 Numerical Analysis I
MATH 453 Numerical Optimization
MATH 550 Real Analysis
STAT 410 Statistics Education: Pedagogy, Content, Technology, and Assessment
STAT 415 Bayesian Reasoning and Methods
STAT 416 Statistical Analysis of Time Series
STAT 417 Survival Analysis Methods
STAT 419 Applied Multivariate Statistics
STAT 421 Survey Sampling and Methodology
STAT 440 SAS Certification Preparation

STAT 441 SAS Advanced Certification Preparation
STAT 500 Independent Study
STAT 541 Advanced Statistical Computing with R
STAT 543 Advanced Design and Analysis of Experiments
STAT 545 Applied Stochastic Processes

Total units 45

1 At least 60% of all units required by the committee as reflected on the formal study plan must be at the 500 level.