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]		8
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.