

## **MASTER OF SCIENCE CURRICULUM IN STATISTICS**

### **SCIENTIFIC PREPARATION**

STAT 291 Statistical Programming  
STAT 363 Linear Models I  
STAT 295 Object Oriented Programming  
STAT 433 Statistical Machine Learning or STAT412 Statistical Data Analysis

### **M.S. PROGRAM WITH THESIS**

STAT 500 M.S. Thesis  
STAT 510 Research Methods and Ethics in Statistics and Data Science  
STAT 542 Seminar I  
STAT 543 Seminar II  
STAT 570 Data Handling and Visualization  
STAT 571 Data Mining and Machine Learning  
STAT 572 Probability and Statistics for Data Science I  
STAT 573 Probability and Statistics for Data Science II  
STAT 8XX Special Studies

Three elective courses. Two of them could be from out of department.  
*Totally seven courses with at least 21 credit hours*

### **M.S. PROGRAM WITHOUT THESIS**

STAT 500 M.S. Thesis  
STAT 510 Research Methods and Ethics in Statistics and Data Science  
STAT 542 Seminar I  
STAT 543 Seminar II  
STAT 570 Data Handling and Visualization  
STAT 571 Data Mining and Machine Learning  
STAT 572 Probability and Statistics for Data Science I  
STAT 573 Probability and Statistics for Data Science II  
STAT598 Term Projects in Statistics  
STAT 8XX Special Studies

Six elective courses. Two of them could be from out of department.  
*Totally ten courses with at least 30 credit hours*

### **Elective Courses in Statistics Department:**

STAT 504 Non-Parametric Statistical Inference and Methods  
STAT 505 Sampling Theory and Methods  
STAT 509 Applied Stochastic Processes  
STAT 518 Statistical Analysis of Designed Experiments  
STAT 525 Regression Theory and Methods  
STAT 529 Statistical Bioinformatics  
STAT 545 Longitudinal Data Analysis  
STAT 553 Actuarial Analysis and Risk Theory  
STAT 554 Computational Statistics  
STAT 557 Statistical Modeling I

STAT 558 Statistical Modeling II  
STAT 559 Applied Multivariate Analysis  
STAT 560 Logistic Regression Analysis  
STAT 562 Univariate Time Series Analysis  
STAT 563 Multivariate Time Series Analysis  
STAT 564 Advanced Statistical Data Analysis  
STAT 565 Decision Theory and Bayesian Analysis  
STAT 566 Reliability Theory and Methods  
STAT 567 Biostatistics and Statistical Genetics  
STAT 568 Statistical Consulting  
STAT 574 Statistics and Data Science Computing  
STAT 575 Computational Tools for Data Science  
STAT 576 Neural Networks for Data Science  
STAT 577 Big Data Analytics  
STAT 578 Artificial Intelligence and Data Science  
STAT 579 Statistical Pattern Recognition  
STAT 580 Stochastic Processes in Machine Learning

## **DOCTOR OF PHILOSOPHY CURRICULUM IN STATISTICS**

### **SCIENTIFIC PREPARATION**

STAT 570 Data Handling and Visualization  
STAT 571 Data Mining and Machine Learning  
STAT 572 Probability and Statistics for Data Science I  
STAT 573 Probability and Statistics for Data Science II

Total: 16 credits.

### **Ph.D. PROGRAM**

STAT 510 Research Methods and Ethics in Statistics and Data Science\*  
STAT 600 PhD Thesis  
STAT 635 Advanced Computational Statistics  
STAT 636 Advanced Generalized Linear Models  
STAT 642 Seminar in Statistics and Data Science I  
STAT 643 Seminar in Statistics and Data Science II  
STAT 647 Probability Theory  
STAT 648 Advanced Statistical Inference  
STAT 8XX Special Studies (4-2) NC

*Four elective course(s) approved by the Department of Statistics.  
Totally eight courses with at least 26 credit hours*

\* If not taken during M.S.

### **INTEGRATED Ph.D. PROGRAM**

STAT 510 Research Methods and Ethics in Statistics and Data Science\*  
STAT 542 Seminar I  
STAT 543 Seminar II  
STAT 570 Data Handling and Visualization  
STAT 571 Data Mining and Machine Learning  
STAT 572 Probability and Statistics For Data Science I  
STAT 573 Probability and Statistics For Data Science II  
STAT 600 PhD Thesis  
STAT 635 Advanced Computational Statistics  
STAT 636 Advanced Generalized Linear Models  
STAT 642 Seminar in Statistics and Data Science I  
STAT 643 Seminar in Statistics and Data Science II  
STAT 647 Probability Theory  
STAT 648 Advanced Statistical Inference  
STAT 8XX Special Studies (4-2) NC

6 elective course(s) approved by the Department of Statistics.  
*Totally fourteen courses with at least 44 credit hours*

\* If not taken during M.S.