

Curriculum

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
STAT 542 Seminar I
STAT 543 Seminar II
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

Four 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
STAT 542 Seminar I
STAT 543 Seminar II
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 598 Term Projects in Statistics
STAT 8XX Special Studies

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

Elective Courses:

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 570 Data Handling and Visualization
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

Curriculum

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*
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

***Five elective course(s) approved by the Department of Statistics.
Totally nine courses with at least 29 credit hours***

* If not taken during M.S.

Elective Courses:

STAT 605 Theory of Linear and Nonlinear Statistical Models
STAT 606 Theory of Experimental Designs
STAT 607 Nonparametric Theory of Statistics
STAT 609 Statistical Decision Theory
STAT 610 Sequential Analysis
STAT 611 Multivariate Analysis
STAT 612 Advanced Topics in Time Series Analysis
STAT 613 Advanced Topics in Life Testing and Reliability
STAT 614 Interpretation of Data
STAT 616 Applications of Statistics in Industry
STAT 617 Large Sample Theory of Statistics
STAT 618 Mathematical Models and Response Surface Methodology
STAT 619 Advanced Topics in Regression and Analysis of Variance
STAT 620 Bayesian Inference
STAT 621 Robust Statistics
STAT 622 Discrete Multivariate Analysis
STAT 630 Advanced Topics in Statistical Inference
STAT 634 Theory of Stationary Random Functions
STAT 637 Spatial Data Analysis
STAT 638 Computation and Optimization
STAT 639 Stochastic Differential Equations
STAT 640 Advanced Statistical Consulting
STAT 641 Ethics in Data Science
STAT 645 Statistical Deep Learning
STAT 646 Statistical Inferences for Stochastic Processes

INTEGRATED Ph.D. PROGRAM

STAT 510 Research Methods and Ethics in Statistics*
STAT 542 Seminar I
STAT 543 Seminar II
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

8 elective course(s) approved by the Department of Statistics.
Totally fifteen courses with at least 47 credit hours

* If not taken during M.S.