

APPLIED STATISTICS GRADUATE CERTIFICATE ELECTIVES

Approved Electives

For the most current lists of approved courses in these categories, please consult the Data Scholarship Program.

Mathematical Statistics

Code	Title	Credit Hours
HES 5963	Statistical Applications in Health and Exercise Science	3
MATH 4753	Applied Statistical Methods (taken for graduate credit)	3
MATH 5743	Introduction to Mathematical Statistics	3

Intermediate Statistics

Code	Title	Credit Hours
BIOL 5943	Multivariate Analysis	3
ECON 4223	Econometric Analysis (taken for graduate credit)	3
COMM 5033	Advanced Statistics	3
MATH 4753	Applied Statistical Methods (taken for graduate credit)	3
MATH 5773	Applied Regression Analysis	3
HES 5903	Sports Performance Analytics	3
P SC 5933	Intermediate Analysis of Political Data	3
PSY 5013	Psychological Statistics II	3
SOC 5483	Advanced Regression Analysis	3

Statistics and Computing

Code	Title	Credit Hours
Social Science Statistics		
ECON 5023	Statistics for Decision Making	3
ECON 5033	Managerial Economics I	3
ECON 5043	Managerial Economics II	3
ECON 5213	Statistics for Econometrics	3
ECON 5243	Econometrics II	3
ECON 5253	Data Science for Economists	3
ECON 5970	Special Topics/Seminar (topic: Bayesian Econometrics)	3
ECON 6343	Econometrics III	3
SOC 5293	Advanced Methods of Social Research	3
SOC 5683	Categorical, Panel, and Advanced Statistical Analyses	3
SOC 5823	Social Demography	3
P SC 5913	Introduction to Analysis of Political and Administrative Data	3
P SC 5940	Advanced Research Methods: Special Topics (topic: Maximum Likelihood Estimation)	3

PSY 6013	Factor Analysis and Structural Equation Models	3
PSY 6023	Psychometrics	3
PSY 6063	Seminar in Quantitative Psychology (topic: Multivariate Statistics)	3
PSY 6063	Seminar in Quantitative Psychology (topic: Multilevel Modeling)	3
PSY 6063	Seminar in Quantitative Psychology (topic: Advanced Structural Equation Modeling)	3
PSY 6073	Experimental Design for Psychology	3

Natural & Applied Sciences Statistics

ASTR 5970	Special Topics/Seminar (topic: Machine Learning)	3
BIOL 4913	Quantitative Biology (taken for graduate credit)	3
BIOL 5943	Multivariate Analysis	3
BIOL 5970	Special Topics in Biology (topic: Bayesian Models)	3
GEOG 5113	Quantitative Methods in Geographic and Environmental Research	3
GIS 5923	Spatial Statistics	3
HES 5283	Sports Financial and Market Analytics	3
HES 5313	Athlete Tracking and Monitoring in Sports	3
HES 5903	Sports Performance Analytics	3
HES 5953	Research Methods in Health and Exercise Science	3
HES 5963	Statistical Applications in Health and Exercise Science	3
METR 5313	Statistical Meteorology	3
METR 5433	Advanced Statistical Meteorology	3

Math & Engineering Statistics

C S 5033	Machine Learning Fundamentals	3
DSAI/ISE 5013	Fundamentals of Engineering Statistical Analysis	3
DSAI 5203	Time Series Analysis	3
DSAI 5403	Bayesian Statistics	3
MATH 4733	Mathematical Theory of Probability (taken for graduate credit)	3
MATH 4753	Applied Statistical Methods (taken for graduate credit)	3
MATH 5173	Advanced Numerical Analysis I	3
MATH 5183	Advanced Numerical Analysis II	3
MATH 5763	Introduction to Stochastic Processes	3
MATH 5773	Applied Regression Analysis	3
MATH 5793	Advanced Applied Statistics	3
MATH 5803	Topics in Mathematics (topic: Bayesian Statistics)	3

Computing Skills

BIOL 5783	Introduction to Python Programming for Data Analytics	3
BIOL 5923	Programming in R for Biology	3
CHEM 5280	Practicum in Biochemistry	1-2
C S 5293	Natural Language Processing	3
C S 5593	Data Mining	3

DSAI/ISE 5103	Intelligent Data Analytics	3
GIS 5003	Spatial Data Management for GIS Professionals	3
HES 5903	Sports Performance Analytics	3
LIS 5613	Dynamic Web Development	3
LIS 5623	Advanced Data Analytics	3
LIS 5643	Introduction to Data Analytics	3
LIS 5970	Special Topics/Seminar (topic: Data Stewardship)	3

Interdisciplinary Applied Statistics

Statistical Consulting, Internship, Mentored research experience with someone outside of your research area, or class outside of research area that includes a project. E.g., Applying an atypical method to your own research or applying a method from your discipline to a different problem/data set. Interdisciplinary experiences are highly encouraged. Must produce a report that includes the results and a discussion of decision-making, ethics, biases, and limitations that are part of the data set/study.

Code	Title	Credit Hours
DSP 5633	Data Analytics and Applied Statistics Internship	3
CAS 5970	Special Topics/Seminar	1-3
CAS 5990	Independent Study (with faculty outside of your discipline, with an approved, applied statistical component)	1-3

Interdisciplinary Advanced Statistics Elective Course outside of student's research area that includes a written project. Courses listed in the Advanced Statistics Electives list may be used. Selected course must include a DSP-preapproved written project.