

ECONOMICS AND STATISTICS

1019 Milstein Learning Center
212-854-3454
Department Administrator: Regina Roberts

The Economics-Statistics major provides the student with a grounding in economic theory comparable to that provided by the general economics major; and also exposes the student to rigorous and extensive training in Statistics. Students choose between two tracks in the major. The Computational Track consists of coursework in applied statistical methods. It is recommended for students preparing to apply statistical methods in the social sciences. The Theoretical Track consists of calculus-based probability, and the theory of statistical inference. It also provides some practical training in data analysis. Please see the [Economics and Statistics](#) major webpage for additional information.

Available to students of the Class of 2021 and later.

Chair: Homa Zarghamee (Professor)

Professors: Elizabeth Ananat, André Burgstaller (Professor Emeritus), Alan Dye, Sharon Harrison, Jingchen Liu (Statistics), Shaw-Hwa Lo (Statistics), Lalith Munasinghe, Randall Reback, David Weiman (Alena Wels Hirschorn '58 Professor of Economics)

Assistant Professors: Martina Jasova, Anja Tolonen

Associate: John Park

Lecturers in Statistics: Banu Baydil, Ronald Neath, David Rios, Joyce Robbins, Gabriel Young

Adjunct Assistant Professor: Ashley Timmer

Requirements for the Computational Track

The Economics-Statistics, Computational Track requires a minimum of 16 courses (52 minimum credits).

10 courses in Economics, Mathematics

ECON BC1003	Introduction to Economic Reasoning
MATH UN1102	CALCULUS II
MATH UN1201	CALCULUS III
MATH UN2010	LINEAR ALGEBRA
ECON BC3033	INTERMEDTE MACROECONOMC THEORY
ECON BC3035	INTERMEDIATE MICROECONOMICS
ECON BC3041	THEORETICL FOUNDTNS-POLIT ECON
Two Upper-level Electives in Economics	
ECON BC3063	SENIOR SEMINAR

6 courses in Statistics

STAT UN1201	CALC-BASED INTRO TO STATISTICS
ECON BC3018	ECONOMETRICS
STAT UN2102	Applied Statistical Computing
STAT UN2104	APPL CATEGORICAL DATA ANALYSIS
One of the following two courses:	
STAT UN3105	APPLIED STATISTICAL METHODS
STAT UN3106	APPLIED MACHINE LEARNING

One Upper-level Elective in Statistics (STAT UN3106, GU4203, GU4204, GU4205, GU4206, or a Computer Science Elective)

Requirements for the Theoretical Track

The Economics-Statistics, Theoretical Track requires a minimum of 16 courses (52 minimum credits).

10 courses in Economics, Mathematics which are the same as in the Computational Track above, plus

6 courses in Statistics which differs from the Computational Track somewhat:

STAT UN1201	CALC-BASED INTRO TO STATISTICS
ECON BC3018	ECONOMETRICS
STAT GU4203	PROBABILITY THEORY
STAT GU4204	STATISTICAL INFERENCE
STAT GU4205	LINEAR REGRESSION MODELS
One Elective in Statistics at the 3000+ level (or a Computer Science Elective such as COMS W1004, W1005, W1007, or STAT UN2102)	

Economics, Mathematics

ECON BC1003 Introduction to Economic Reasoning. 4 points.

Covers basic elements of microeconomic and macroeconomic reasoning at an introductory level. Topics include Individual Constraints and Preferences, Production by Firms, Market Transactions, Competition, The Distribution of Income, Technological Progress and Growth, Unemployment and Inflation, the Role of Government in the Economy.

Note: Students cannot get credit for ECON BC1003 if they have taken the Columbia introductory course ECON W1105 Principles of Economics.

Spring 2025: ECON BC1003

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1003	001/00775	T Th 11:40am - 12:55pm 263 Macy Hall	Alan Dye	4	65/100
ECON 1003	002/00774	M W 2:40pm - 3:55pm 263 Macy Hall	Mulu Gebreyohannes	4	62/65

Fall 2025: ECON BC1003

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 1003	001/00054	T Th 11:40am - 12:55pm 405 Milbank Hall	Alan Dye	4	101/107
ECON 1003	002/00055	M W 1:10pm - 2:25pm 418 Barnard Hall	Mulu Gebreyohannes	4	63/75
ECON 1003	003/00773	M W 10:10am - 11:25am LI003 Barnard Hall	Mulu Gebreyohannes	4	58/75

MATH UN1102 CALCULUS II. 3.00 points.Prerequisites: MATH UN1101 *MATH V1101* or the equivalent.

Prerequisites: MATH UN1101 or the equivalent. Methods of integration, applications of the integral, Taylors theorem, infinite series. (SC)

Spring 2025: MATH UN1102

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 1102	001/00477	T Th 2:40pm - 3:55pm LI002 Milstein Center	Lindsay Piechnik	3.00	87/90
MATH 1102	002/15285	M W 10:10am - 11:25am 312 Mathematics Building	Evan Sorensen	3.00	49/100
MATH 1102	003/00493	M W 11:40am - 12:55pm 323 Milbank Hall	Wenjian Liu	3.00	37/100
MATH 1102	004/15287	M W 4:10pm - 5:25pm 606 Martin Luther King Building	Jingbo Wan	3.00	27/30
MATH 1102	005/15289	T Th 10:10am - 11:25am 417 Mathematics Building	Peter Voit	3.00	20/64
MATH 1102	006/15291	T Th 11:40am - 12:55pm 203 Mathematics Building	Dawei Shen	3.00	23/100
MATH 1102	007/15294	T Th 1:10pm - 2:25pm 312 Mathematics Building	Andres Ibanez Nunez	3.00	8/100

Fall 2025: MATH UN1102

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 1102	001/00297	M W 11:40am - 12:55pm 263 Macy Hall	Cristian Iovanov	3.00	56/100
MATH 1102	002/00298	M W 1:10pm - 2:25pm 405 Milbank Hall	Cristian Iovanov	3.00	60/100
MATH 1102	004/12512	T Th 8:40am - 9:55am 503 Hamilton Hall	Andres Ibanez Nunez	3.00	4/100
MATH 1102	005/12511	T Th 10:10am - 11:25am 503 Hamilton Hall	Andres Ibanez Nunez	3.00	9/100
MATH 1102	006/12513	T Th 6:10pm - 7:25pm 417 Mathematics Building	Elliott Stein	3.00	54/64

MATH UN1201 CALCULUS III. 3.00 points.Prerequisites: MATH UN1101 *MATH V1101* or the equivalent.

Prerequisites: MATH UN1101 or the equivalent Vectors in dimensions 2 and 3, complex numbers and the complex exponential function with applications to differential equations, Cramers rule, vector-valued functions of one variable, scalar-valued functions of several variables, partial derivatives, gradients, surfaces, optimization, the method of Lagrange multipliers. (SC)

Spring 2025: MATH UN1201

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 1201	001/00494	M W 10:10am - 11:25am 405 Milbank Hall	Cristian Iovanov	3.00	30/90
MATH 1201	002/00496	M W 11:40am - 12:55pm 405 Milbank Hall	Cristian Iovanov	3.00	56/90
MATH 1201	003/15298	M W 2:40pm - 3:55pm 312 Mathematics Building	Deeparaj Bhat	3.00	93/100
MATH 1201	004/15300	T Th 1:10pm - 2:25pm 203 Mathematics Building	Deeparaj Bhat	3.00	84/100
MATH 1201	005/15301	T Th 4:10pm - 5:25pm 203 Mathematics Building	Rostislav Akhmechet	3.00	90/100
MATH 1201	006/15302	T Th 6:10pm - 7:25pm 203 Mathematics Building	Rostislav Akhmechet	3.00	86/100

Fall 2025: MATH UN1201

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 1201	001/00300	M W 8:40am - 9:55am 405 Milbank Hall	Daniela De Silva	3.00	100/100
MATH 1201	002/00301	T Th 4:10pm - 5:25pm LI002 Milstein Center	Lindsay Piechnik	3.00	39/100
MATH 1201	003/00302	T Th 2:40pm - 3:55pm 405 Milbank Hall	Lindsay Piechnik	3.00	59/100
MATH 1201	004/12517	M W 4:10pm - 5:25pm 312 Mathematics Building	Deeparaj Bhat	3.00	89/100
MATH 1201	005/12516	M W 6:10pm - 7:25pm 312 Mathematics Building	Deeparaj Bhat	3.00	18/100
MATH 1201	006/12515	T Th 10:10am - 11:25am 312 Mathematics Building	Gyujin Oh	3.00	100/100
MATH 1201	007/12514	T Th 11:40am - 12:55pm 312 Mathematics Building	Gyujin Oh	3.00	100/100
MATH 1201	008/12925	T Th 1:10pm - 2:25pm 203 Mathematics Building	Anh Duc Vo	3.00	34/100

MATH UN2010 LINEAR ALGEBRA. 3.00 points.

Prerequisites: *MATH V1201*, or the equivalent.

Matrices, vector spaces, linear transformations, eigenvalues and eigenvectors, canonical forms, applications. (SC)

Spring 2025: MATH UN2010

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 2010	001/00487	M W 8:40am - 9:55am 263 Macy Hall	Wenjian Liu	3.00	82/100
MATH 2010	002/00491	M W 2:40pm - 3:55pm LI002 Milstein Center	Lindsay Piechnik	3.00	79/90
MATH 2010	003/15325	T Th 10:10am - 11:25am 312 Mathematics Building	Qiao He	3.00	61/100
MATH 2010	004/15328	T Th 11:40am - 12:55pm 312 Mathematics Building	Qiao He	3.00	78/100
MATH 2010	005/15331	T Th 4:10pm - 5:25pm 312 Mathematics Building	Elliott Stein	3.00	54/64

Fall 2025: MATH UN2010

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
MATH 2010	001/00303	M W 10:10am - 11:25am 408 Zankel	Lindsay Piechnik	3.00	90/90
MATH 2010	002/12525	M W 8:40am - 9:55am 207 Mathematics Building	Yoonjoo Kim	3.00	37/100
MATH 2010	003/12524	M W 11:40am - 12:55pm 417 Mathematics Building	Yoonjoo Kim	3.00	100/100
MATH 2010	004/12523	T Th 10:10am - 11:25am 310 Fayerweather	Andrew Blumberg	3.00	48/100
MATH 2010	005/12522	T Th 4:10pm - 5:25pm 717 Hamilton Hall	Yujie Xu	3.00	26/100

ECON BC3033 INTERMEDTE MACROECONOMC THEORY. 4.00 points.

Prerequisites: An introductory course in economics and a functioning knowledge of high school algebra and analytical geometry or permission of the instructor. Systematic exposition of current macroeconomic theories of unemployment, inflation, and international financial adjustments

Spring 2025: ECON BC3033

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3033	001/00755	M W 11:40am - 12:55pm 302 Barnard Hall	Nuria Quella	4.00	46/50
ECON 3033	002/00756	M W 1:10pm - 2:25pm 418 Barnard Hall	Nuria Quella	4.00	57/70

Fall 2025: ECON BC3033

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3033	001/00069	M W 10:10am - 11:25am 418 Barnard Hall	Sarah Gertler	4.00	49/60

ECON BC3035 INTERMEDIATE MICROECONOMICS. 4.00 points.

Prerequisites: An introductory course in microeconomics or a combined macro/micro principles course (ECON BC1003 or ECON W1105, or the equivalent) and one semester of calculus or ECON BC1007, or permission of the instructor. Preferences and demand; production, cost, and supply; behavior of markets in partial equilibrium; resource allocation in general equilibrium; pricing of goods and services under alternative market structures; implications of individual decision-making for labor supply; income distribution, welfare, and public policy. Emphasis on problem solving

Spring 2025: ECON BC3035

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3035	001/00754	T Th 1:10pm - 2:25pm LI003 Barnard Hall	Lalith Munasinghe	4.00	46/65

Fall 2025: ECON BC3035

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3035	001/00070	M W 11:40am - 12:55pm 152 Horace Mann Hall	Elizabeth Ananat	4.00	37/50
ECON 3035	002/00078	T Th 1:10pm - 2:25pm 152 Horace Mann Hall	John Park	4.00	60/60
ECON 3035	003/01103	T Th 4:10pm - 5:25pm 202 Milbank Hall	John Park	4.00	30/30

ECON BC3041 THEORETICL FOUNDTNS-POLIT ECON. 3.00 points.

Prerequisites: An introductory course in economics or permission of the instructor. Intellectual origins of the main schools of thought in political economy. Study of the founding texts in classical political economy, Marxian economics, neoclassicism, and Keynesianism

Spring 2025: ECON BC3041

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3041	001/00863	M W 4:10pm - 5:25pm 418 Barnard Hall	Kurt Semm	3.00	80/72
ECON 3041	002/00923	T Th 2:40pm - 3:55pm LI003 Barnard Hall	Kurt Semm	3.00	79/72

Fall 2025: ECON BC3041

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3041	001/00073	M W 10:10am - 11:25am 328 Milbank Hall	Kurt Semm	3.00	54/55
ECON 3041	002/00074	M W 2:40pm - 3:55pm LI003 Barnard Hall	Kurt Semm	3.00	55/55

ECON BC3063 SENIOR SEMINAR. 4.00 points.

Prerequisites: Permission of the instructor and the completion of all courses (except for the senior requirement) required for the economics track, political economy track, or economics and mathematics majors. Exceptions to these prerequisites may be granted by the chair of the department only. Seminar sections are limited to 15 students. A topic in economic theory or policy of the instructors choice. See department for current topics and for senior requirement preference forms

Spring 2025: ECON BC3063

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3063	001/00864	Th 4:10pm - 6:00pm 214 Milbank Hall	Lalith Munasinghe	4.00	20/20
ECON 3063	002/00764	T 6:10pm - 8:00pm 912 Milstein Center	Elham Saeidinezhad	4.00	19/18
ECON 3063	003/00769	M 6:10pm - 8:00pm 308 Diana Center	Rajiv Sethi	4.00	16/16

Fall 2025: ECON BC3063

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3063	001/00851	M 2:10pm - 4:00pm 912 Milstein Center	Sharon Harrison	4.00	14/16
ECON 3063	002/00854	W 2:10pm - 4:00pm 912 Milstein Center	Ashley Timmer	4.00	15/16

Statistics, Computer Science**STAT UN1201 CALC-BASED INTRO TO STATISTICS. 3.00 points.**

Prerequisites: one semester of calculus. Designed for students who desire a strong grounding in statistical concepts with a greater degree of mathematical rigor than in STAT W1111. Random variables, probability distributions, pdf, cdf, mean, variance, correlation, conditional distribution, conditional mean and conditional variance, law of iterated expectations, normal, chi-square, F and t distributions, law of large numbers, central limit theorem, parameter estimation, unbiasedness, consistency, efficiency, hypothesis testing, p-value, confidence intervals, maximum likelihood estimation. Serves as the pre-requisite for ECON W3412

Spring 2025: STAT UN1201

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 1201	001/13992	M W 10:10am - 11:25am 717 Hamilton Hall	Hammou El Barmi	3.00	78/86
STAT 1201	002/13993	M W 10:10am - 11:25am 602 Hamilton Hall	Joyce Robbins	3.00	70/85
STAT 1201	003/13994	T Th 10:10am - 11:25am 717 Hamilton Hall	Joyce Robbins	3.00	74/86
STAT 1201	004/13995	M W 6:10pm - 7:25pm 417 International Affairs Bldg	Banu Baydil	3.00	138/180

Fall 2025: STAT UN1201

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 1201	001/13708	T Th 8:40am - 9:55am 402 Chandler	Chenyang Zhong	3.00	125/125
STAT 1201	002/13710	M W 6:10pm - 7:25pm 309 Havemeyer Hall	Banu Baydil	3.00	275/275
STAT 1201	003/18505	M W 8:40am - 9:55am 417 Mathematics Building	Banu Baydil	3.00	50/50

ECON BC3018 ECONOMETRICS. 4.00 points.

Prerequisites: ECON BC3033 or ECON BC3035, and ECON BC2411 or STAT W1111 or STAT W1211, or permission of the instructor. Prerequisites: ECON BC3033 or ECON BC3035, and ECON BC2411 or STAT W1111 or STAT W1211, or permission of the instructor. Specification, estimation and evaluation of economic relationships using economic theory, data, and statistical inference; testable implications of economic theories; econometric analysis of topics such as consumption, investment, wages and unemployment, and financial markets

Spring 2025: ECON BC3018

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3018	001/00848	M W 1:10pm - 2:25pm 504 Diana Center	Sinem Sonmez	4.00	16/60

Fall 2025: ECON BC3018

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
ECON 3018	001/00067	M W 10:10am - 11:25am 152 Horace Mann Hall	Ashley Wong	4.00	60/60

STAT UN2102 Applied Statistical Computing. 3.00 points.

Corequisites: An introductory course in statistic (STAT UN1101 is recommended).

Corequisites: An introductory course in statistic (STAT UN1101 is recommended). This course is an introduction to R programming. After learning basic programming component, such as defining variables and vectors, and learning different data structures in R, students will, via project-based assignments, study more advanced topics, such as conditionals, modular programming, and data visualization. Students will also learn the fundamental concepts in computational complexity, and will practice writing reports based on their data analyses

Spring 2025: STAT UN2102

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 2102	001/13996	T Th 4:10pm - 5:25pm 428 Pupin Laboratories	Alex Pijyan	3.00	97/120

Fall 2025: STAT UN2102

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 2102	001/13728	T Th 4:10pm - 5:25pm 207 Mathematics Building	Alex Pijyan	3.00	92/160

STAT UN2104 APPL CATEGORICAL DATA ANALYSIS. 3.00 points.

Prerequisites: STAT UN2103 is strongly recommended. Students without programming experience in R might find STAT UN2102 very helpful.

Prerequisites: STAT UN2103 is strongly recommended. Students without programming experience in R might find STAT UN2102 very helpful.

This course covers statistical models and methods for analyzing and drawing inferences for problems involving categorical data. The goals are familiarity and understanding of a substantial and integrated body of statistical methods that are used for such problems, experience in analyzing data using these methods, and proficiency in communicating the results of such methods, and the ability to critically evaluate the use of such methods. Topics include binomial proportions, two-way and three-way contingency tables, logistic regression, log-linear models for large multi-way contingency tables, graphical methods. The statistical package R will be used

Spring 2025: STAT UN2104

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 2104	001/13999	M W 8:40am - 9:55am 717 Hamilton Hall	Ronald Neath	3.00	45/86

STAT UN3105 APPLIED STATISTICAL METHODS. 3.00 points.

Prerequisites: At least one, and preferably both, of STAT UN2103 and UN2104 are strongly recommended. Students without programming experience in R might find STAT UN2102 very helpful.

Prerequisites: At least one, and preferably both, of STAT UN2103 and UN2104 are strongly recommended. Students without programming experience in R might find STAT UN2102 very helpful. This course is intended to give students practical experience with statistical methods beyond linear regression and categorical data analysis. The focus will be on understanding the uses and limitations of models, not the mathematical foundations for the methods. Topics that may be covered include random and mixed-effects models, classical non-parametric techniques, the statistical theory causality, sample survey design, multi-level models, generalized linear regression, generalized estimating equations and over-dispersion, survival analysis including the Kaplan-Meier estimator, log-rank statistics, and the Cox proportional hazards regression model. Power calculations and proposal and report writing will be discussed

Fall 2025: STAT UN3105

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 3105	001/13733	M W 2:40pm - 3:55pm 702 Hamilton Hall	Benjamin Goodrich	3.00	40/86

STAT UN3106 APPLIED MACHINE LEARNING. 3.00 points.

Prerequisites: STAT UN2103. Students without programming experience in R might find STAT UN2102 very helpful.

Prerequisites: STAT UN2103. Students without programming experience in R might find STAT UN2102 very helpful. This course is a machine learning class from an application perspective. We will cover topics including data-based prediction, classification, specific classification methods (such as logistic regression and random forests), and basics of neural networks. Programming in homeworks will require R

Spring 2025: STAT UN3106

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 3106	001/14000	T Th 2:40pm - 3:55pm 602 Hamilton Hall	Wayne Lee	3.00	36/86

STAT GU4203 PROBABILITY THEORY. 3.00 points.

Prerequisites: At least one semester, and preferably two, of calculus. An introductory course (STAT UN2101, preferably) is strongly recommended.

Prerequisites: At least one semester, and preferably two, of calculus. An introductory course (STAT UN1201, preferably) is strongly recommended. A calculus-based introduction to probability theory. A quick review of multivariate calculus is provided. Topics covered include random variables, conditional probability, expectation, independence, Bayes' rule, important distributions, joint distributions, moment generating functions, central limit theorem, laws of large numbers and Markov's inequality

Spring 2025: STAT GU4203

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4203	001/14011	T Th 6:10pm - 7:25pm 312 Mathematics Building	Marco Avella Medina	3.00	81/116
STAT 4203	002/14010	T Th 6:10pm - 7:25pm 517 Hamilton Hall	Gabriel Young	3.00	2/3

Fall 2025: STAT GU4203

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4203	001/13737	T Th 10:10am - 11:25am 833 Seeley W. Mudd Building	Marcel Nutz	3.00	116/120
STAT 4203	002/13738	T Th 6:10pm - 7:25pm 142 Uris Hall	Cristian Pasarica	3.00	50/50
STAT 4203	003/13739	T Th 6:10pm - 7:25pm 142 Uris Hall	Cristian Pasarica	3.00	31/40

STAT GU4204 STATISTICAL INFERENCE. 3.00 points.

Prerequisites: STAT GU4203. At least one semester of calculus is required; two or three semesters are strongly recommended. Calculus-based introduction to the theory of statistics. Useful distributions, law of large numbers and central limit theorem, point estimation, hypothesis testing, confidence intervals maximum likelihood, likelihood ratio tests, nonparametric procedures, theory of least squares and analysis of variance

Spring 2025: STAT GU4204

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4204	001/14012	T Th 1:10pm - 2:25pm 503 Hamilton Hall	Banu Baydil	3.00	39/45
STAT 4204	002/14013	T Th 7:10pm - 8:25pm 501 Schermerhorn Hall	Pratyay Datta	3.00	25/35
STAT 4204	003/17906	T Th 7:10pm - 8:25pm 501 Schermerhorn Hall	Pratyay Datta	3.00	22/25

Fall 2025: STAT GU4204

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4204	001/13740	M W 6:10pm - 7:25pm 142 Uris Hall	Pratyay Datta	3.00	50/50
STAT 4204	002/13741	M W 6:10pm - 7:25pm 467 Ext Schermerhorn Hall		3.00	6/40

STAT GU4205 LINEAR REGRESSION MODELS. 3.00 points.

Prerequisites: STAT GU4204 or the equivalent, and a course in linear algebra. Theory and practice of regression analysis. Simple and multiple regression, testing, estimation, prediction, and confidence procedures, modeling, regression diagnostics and plots, polynomial regression, colinearity and confounding, model selection, geometry of least squares. Extensive use of the computer to analyse data

Spring 2025: STAT GU4205

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4205	001/14014	M W 6:10pm - 7:25pm 517 Hamilton Hall	Ronald Neath	3.00	31/50

Fall 2025: STAT GU4205

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4205	001/13742	M W 1:10pm - 2:25pm 517 Hamilton Hall	Dobrin Marchev	3.00	24/86
STAT 4205	003/13744	M W 6:10pm - 7:25pm 417 International Affairs Bldg	Gabriel Young	3.00	30/30

STAT GU4206 STAT COMP # INTRO DATA SCIENCE. 3.00 points.

Prerequisites: STAT GU4204 and GU4205 or the equivalent.

Prerequisites: STAT GU4204 and GU4205 or the equivalent. Introduction to programming in the R statistical package: functions, objects, data structures, flow control, input and output, debugging, logical design, and abstraction. Writing code for numerical and graphical statistical analyses. Writing maintainable code and testing, stochastic simulations, parallelizing data analyses, and working with large data sets. Examples from data science will be used for demonstration

Spring 2025: STAT GU4206

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4206	001/14015	F 10:10am - 12:40pm 329 Pupin Laboratories	Yongchan Kwon	3.00	6/10

Fall 2025: STAT GU4206

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
STAT 4206	001/13745	F 10:10am - 12:40pm 417 International Affairs Bldg	Benjamin Goodrich	3.00	20/30
STAT 4206	002/13746	Th 6:10pm - 8:40pm 501 Schermerhorn Hall	Haiyuan Wang	3.00	7/20

COMS W1004 Introduction to Computer Science and Programming in Java. 3 points.

Lect: 3.

A general introduction to computer science for science and engineering students interested in majoring in computer science or engineering. Covers fundamental concepts of computer science, algorithmic problem-solving capabilities, and introductory Java programming skills. Assumes no prior programming background. Columbia University students may receive credit for only one of the following two courses: *1004* or *1005*.

Spring 2025: COMS W1004

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
COMS 1004	001/11948	T Th 11:40am - 12:55pm 417 International Affairs Bldg	Adam Cannon	3	108/398
COMS 1004	002/11949	T Th 1:10pm - 2:25pm 417 International Affairs Bldg	Adam Cannon	3	86/398

Fall 2025: COMS W1004

Course Number	Section/Call Number	Times/Location	Instructor	Points	Enrollment
COMS 1004	001/12794	M W 2:40pm - 3:55pm 309 Havemeyer Hall	Paul Blaer	3	138/320
COMS 1004	002/12795	M W 5:40pm - 6:55pm 833 Seeley W. Mudd Building	Paul Blaer	3	93/164

COMS W1005 Introduction to Computer Science and Programming in MATLAB. 3 points.

CC/GS: Partial Fulfillment of Science Requirement

A general introduction to computer science concepts, algorithmic problem-solving capabilities, and programming skills in MATLAB. Assumes no prior programming background. Columbia University students may receive credit for only one of the following two courses: *W1004* or *W1005*.