ECONOMICS AND STATISTICS

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 of 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.

Available to students of the Class of 2021 and later.

Department Administrator: Robert O'Connor

Chair: Rajiv Sethi (Ann Whitney Olin Professor)
Professors: Elizabeth Ananat, André Burgstaller, Alan Dye, Daniel Hamermesh (Distinguished Scholar), Sharon Harrison, Shaw-Hwa Lo (Statistics), Lalith Munasinghe, David Weiman (Alena Wels Hirschorn ’58 Professor)
Associate Professors: Yang Feng (Statistics), Jingchen Liu (Statistics), Randall Reback, Ashley Timmer (Adjunct)
Assistant Professors: Belinda Archibong, Biwei Chen (Term), Ashley Timmer (Adjunct), Peter Orbanz (Statistics), Sonia Pereira (Term), Anja Tolonen, Homa Zarghamee

Computational Track

A major in Economics-Statistics, Computational Track must complete the following 16 courses or their equivalents:

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 Intermediate Macroeconomic Theory
ECON BC3035 Intermediate Microeconomic Theory
ECON BC3041 Theoretical Foundations of Political Economy

Two Upper-level Electives in Economics
ECON BC3063 Senior Seminar

6 courses in Statistics

STAT UN1201 Calculus-Based Introduction to Statistics
ECON BC3018 Econometrics
STAT GU4203 Probability Theory
STAT GU4204 Statistical Inference
STAT GU4205 Linear Regression Models

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

Theoretical Track

A major in Economics-Statistics, Theoretical Track must complete the following 16 courses or their equivalents:

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 Calculus-Based Introduction 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. 3 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.

<table>
<thead>
<tr>
<th>Spring 2019: ECON BC1003</th>
<th>Course Number</th>
<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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<tr>
<td>ECON 1003</td>
<td>001/04582</td>
<td>T Th 11:40am - 12:55pm Room TBA</td>
<td>Sonia Pereira</td>
<td>3</td>
<td>39/50</td>
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<tr>
<td>ECON 1003</td>
<td>002/06347</td>
<td>T Th 4:10pm - 5:25pm L1001 Milstein Center</td>
<td>Biwei Chen</td>
<td>3</td>
<td>29/50</td>
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<table>
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<tr>
<th>Fall 2019: ECON BC1003</th>
<th>Course Number</th>
<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 1003</td>
<td>001/07809</td>
<td>M W 1:10pm - 2:25pm 328 Milbank Hall</td>
<td>Sonia Pereira, Qasim Abbas</td>
<td>3</td>
<td>48/56</td>
<td></td>
</tr>
<tr>
<td>ECON 1003</td>
<td>003/07811</td>
<td>T Th 10:10am - 11:25am L104 Diana Center</td>
<td>Belinda Archibong, Dan Poniachik</td>
<td>3</td>
<td>39/58</td>
<td></td>
</tr>
</tbody>
</table>
MATH UN1102 Calculus II. 3 points.
Prerequisites: MATH UN1101 or the equivalent.
Methods of integration, applications of the integral, Taylor’s theorem, infinite series. (SC)

<table>
<thead>
<tr>
<th>Spring 2019: MATH UN1102</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1102 001/17885</td>
<td>M W 4:10pm - 5:25pm 203 Mathematics Building</td>
<td>Henri Roesch</td>
<td>3</td>
<td>47/100</td>
</tr>
<tr>
<td>MATH 1102 002/72870</td>
<td>M W 6:10pm - 7:25pm 203 Mathematics Building</td>
<td>Henri Roesch</td>
<td>3</td>
<td>8/100</td>
</tr>
<tr>
<td>MATH 1102 003/62450</td>
<td>T Th 11:40am - 12:55pm 417 Mathematics Building</td>
<td>Pak Hin Lee</td>
<td>3</td>
<td>33/36</td>
</tr>
<tr>
<td>MATH 1102 004/16563</td>
<td>T Th 2:40pm - 3:55pm 407 Mathematics Building</td>
<td>Raymond Cheng</td>
<td>3</td>
<td>27/36</td>
</tr>
<tr>
<td>MATH 1102 005/17398</td>
<td>T Th 4:10pm - 5:25pm Room TBA</td>
<td>Beomjun Choi</td>
<td>3</td>
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<table>
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<tr>
<th>Fall 2019: MATH UN1102</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>MATH 1102 001/29219</td>
<td>M W 1:10pm - 2:25pm 417 Mathematics Building</td>
<td>Yi Sun</td>
<td>3</td>
<td>59/64</td>
</tr>
<tr>
<td>MATH 1102 002/50788</td>
<td>T Th 10:10am - 11:25am 417 Mathematics Building</td>
<td>Peter Holt</td>
<td>3</td>
<td>20/64</td>
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<tr>
<td>MATH 1102 003/50789</td>
<td>T Th 4:10pm - 5:25pm 203 Mathematics Building</td>
<td>Nathan Dowlin</td>
<td>3</td>
<td>97/100</td>
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<tr>
<td>MATH 1102 004/50790</td>
<td>T Th 6:10pm - 7:25pm 203 Mathematics Building</td>
<td>Nathan Dowlin</td>
<td>3</td>
<td>48/100</td>
</tr>
<tr>
<td>MATH 1102 005/50791</td>
<td>M W 4:10pm - 5:25pm 407 Mathematics Building</td>
<td>Xuan Wu</td>
<td>3</td>
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<tr>
<td>MATH 1102 006/50792</td>
<td>T Th 11:40am - 12:55pm 407 Mathematics Building</td>
<td>Donghan Kim</td>
<td>3</td>
<td>33/36</td>
</tr>
</tbody>
</table>

MATH UN1201 Calculus III. 3 points.
Prerequisites: MATH UN1101 or the equivalent
Vectors in dimensions 2 and 3, complex numbers and the complex exponential function with applications to differential equations, Cramer’s rule, vector-valued functions of one variable, scalar-valued functions of several variables, partial derivatives, gradients, surfaces, optimization, the method of Lagrange multipliers. (SC)

<table>
<thead>
<tr>
<th>Spring 2019: MATH UN1201</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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</thead>
<tbody>
<tr>
<td>MATH 1201 001/29129</td>
<td>M W 10:10am - 11:25am 312 Mathematics Building</td>
<td>Igor Krichever</td>
<td>3</td>
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<tr>
<td>MATH 1201 002/28142</td>
<td>M W 2:40pm - 3:55pm 203 Mathematics Building</td>
<td>Linh Truong</td>
<td>3</td>
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<tr>
<td>MATH 1201 003/67934</td>
<td>M W 4:10pm - 5:25pm 312 Mathematics Building</td>
<td>Giulia Sacca</td>
<td>3</td>
<td>64/100</td>
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<tr>
<td>MATH 1201 004/20699</td>
<td>M W 6:10pm - 7:25pm Room TBA</td>
<td>Teng Fei</td>
<td>3</td>
<td>55/100</td>
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<tr>
<td>MATH 1201 005/20830</td>
<td>T Th 11:40am - 12:55pm 203 Mathematics Building</td>
<td>Yoel Groman</td>
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<table>
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<tr>
<th>Fall 2019: MATH UN1201</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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</thead>
<tbody>
<tr>
<td>MATH 1201 001/50765</td>
<td>M W 8:40am - 9:55am 312 Mathematics Building</td>
<td>Mohammed Abouzaid</td>
<td>3</td>
<td>61/100</td>
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<tr>
<td>MATH 1201 002/50766</td>
<td>M W 10:10am - 11:25am 312 Mathematics Building</td>
<td>Konstantin Alekshin</td>
<td>3</td>
<td>38/100</td>
</tr>
<tr>
<td>MATH 1201 003/50767</td>
<td>M W 11:40am - 12:55pm 312 Mathematics Building</td>
<td>Konstantin Alekshin</td>
<td>3</td>
<td>59/100</td>
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<tr>
<td>MATH 1201 004/50768</td>
<td>T Th 11:40am - 12:55pm 520 Mathematics Building</td>
<td>Ilya Kofman</td>
<td>3</td>
<td>22/49</td>
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<tr>
<td>MATH 1201 005/50769</td>
<td>T Th 1:10pm - 2:25pm 203 Mathematics Building</td>
<td>Stephen Miller</td>
<td>3</td>
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<tr>
<td>MATH 1201 006/50770</td>
<td>T Th 2:40pm - 3:55pm 312 Mathematics Building</td>
<td>Stephen Miller</td>
<td>3</td>
<td>88/100</td>
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<tr>
<td>MATH 1201 007/50771</td>
<td>T Th 4:10pm - 5:25pm 207 Mathematics Building</td>
<td>Inbar Klang</td>
<td>3</td>
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<tr>
<td>MATH 1201 008/50772</td>
<td>T Th 6:10pm - 7:25pm 323 Milbank Hall</td>
<td>Inbar Klang</td>
<td>3</td>
<td>27/100</td>
</tr>
</tbody>
</table>
MATH UN2010 Linear Algebra. 3 points.
Prerequisites: MATH UN1201 or the equivalent.
Matrices, vector spaces, linear transformations, eigenvalues and eigenvectors, canonical forms, applications. (SC)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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<tr>
<td>MATH 2010</td>
<td>001/61743</td>
<td>M W 11:40am - 12:55pm</td>
<td>Bianca Santoro</td>
<td>3 89/116</td>
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<tr>
<td>MATH 2010</td>
<td>002/18837</td>
<td>M W 11:40pm - 12:55pm</td>
<td>Joshua Sussan</td>
<td>3 93/100</td>
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<tr>
<td>MATH 2010</td>
<td>003/12804</td>
<td>T Th 10:10am - 11:25am</td>
<td>Nicholas Salter</td>
<td>3 62/100</td>
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<tr>
<td>MATH 2010</td>
<td>004/23515</td>
<td>T Th 11:40am - 12:55pm</td>
<td>Nicholas Salter</td>
<td>3 81/100</td>
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<tr>
<td>MATH 2010</td>
<td>005/68757</td>
<td>T 6:10pm - 7:25pm</td>
<td>Elliott Stein</td>
<td>3 50/100</td>
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</table>

Spring 2019: MATH UN2010

ECON 3033 Intermediate Macroeconomic Theory. 4 points.
Prerequisites: An introductory course in economics 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.

<table>
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<tr>
<th>Course Number</th>
<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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<tbody>
<tr>
<td>ECON 3033</td>
<td>001/04588</td>
<td>M W 2:40pm - 3:55pm</td>
<td>Elizabeth Ananat</td>
<td>4 52/60</td>
<td></td>
</tr>
</tbody>
</table>

Fall 2019: ECON BC3035

ECON BC3041 Theoretical Foundations of Political Economy. 3 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.

ECON BC3035 Intermediate Microeconomic Theory. 4 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.

<table>
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<tr>
<th>Course Number</th>
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<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 3033</td>
<td>001/07742</td>
<td>T 1:10pm - 2:25pm</td>
<td>Andre Burgstaller</td>
<td>3 72</td>
<td></td>
</tr>
</tbody>
</table>

Fall 2019: ECON BC3041

ECON BC3033 Intermediate Macroeconomic Theory. 4 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.

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<tr>
<th>Course Number</th>
<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 3033</td>
<td>001/06015</td>
<td>T Th 8:40am - 9:55am</td>
<td>Biwei Chen</td>
<td>4 37/45</td>
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Spring 2019: ECON BC3033

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<th>Section/Call Number</th>
<th>Times/Location</th>
<th>Instructor</th>
<th>Points</th>
<th>Enrollment</th>
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</thead>
<tbody>
<tr>
<td>ECON 3033</td>
<td>001/07802</td>
<td>M W 10:10am - 11:25am</td>
<td>Martina Jasova, Martha Susana Jaimes Builes</td>
<td>4 64/70</td>
<td></td>
</tr>
</tbody>
</table>
ECON BC3063 Senior Seminar. 4 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 instructor’s choice. See department for current topics and for senior requirement preference forms.

Spring 2019: ECON BC3063
Course Number Section/Call Number Times/Location Instructor Points Enrollment
ECON 3063 001/02840 Th 4:10pm - 5:25pm 602 Hamilton Hall ElBarmi 4 17
ECON 3063 003/02843 M 2:10pm - 3:25pm 227 Milbank Hall St. Claire 3 12/16

Fall 2019: ECON BC3063
Course Number Section/Call Number Times/Location Instructor Points Enrollment
ECON 3063 001/07803 M 2:10pm - 3:25pm 502 Diana Center Mukherjee 4 17/16
ECON 3063 002/07804 T 2:10pm - 3:25pm 805 Altschul Hall Hammou 3 12/16
ECON 3063 003/07829 M 12:00pm - 1:25pm Ll018 Milstein Center Sumit 4 12/16

Statistics, Computer Science
STAT UN1201 Calculus-Based Introduction to Statistics. 3 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 2019: STAT UN1201
Course Number Section/Call Number Times/Location Instructor Points Enrollment
STAT 1201 001/70138 T Th 10:10am - 11:25am 501 Northwest Corner Joyce Robbins 3 56/86
STAT 1201 002/57351 M W 8:40am - 9:55am 602 Hamilton Hall ElBarmi 3 82/86
STAT 1201 003/68149 T Th 8:40am - 9:55am 517 Hamilton Hall Sumit 3 72/86
STAT 1201 004/70428 T Th 6:10pm - 7:25pm Room TBA Rabinowitz 3 65/86

Fall 2019: STAT UN1201
Course Number Section/Call Number Times/Location Instructor Points Enrollment
STAT 1201 001/48420 M W 11:40am - 12:55pm 602 Hamilton Hall Kpotufe 3 68/86
STAT 1201 002/48422 T Th 8:40am - 9:55am 602 Hamilton Hall Mukherje 3 81/86
STAT 1201 003/48423 M W 10:10am - 11:25am 602 Hamilton Hall Philip Proter 3 65/86
STAT 1201 004/48424 T Th 6:10pm - 7:25pm 602 Hamilton Hall Samory 3 50/86

ECON BC3018 Econometrics. 4 points.
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.

Fall 2019: ECON BC3018
Course Number Section/Call Number Times/Location Instructor Points Enrollment
ECON 3018 001/07812 M W 11:40am - 12:55pm Ll103 Diana Center Zarghamee 4 43/55

STAT UN2102 Applied Statistical Computing. 3 points.
Corequisites: An introductory course in statistics (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 recursion, conditionals, modular programming, and data visualization. Students will also learn the fundamental concepts in computational complexity, and will practice writing reports based on their statistical analyses.

Spring 2019: STAT UN2102
Course Number Section/Call Number Times/Location Instructor Points Enrollment
STAT 2102 001/65489 T Th 4:10pm - 5:25pm 614 Schermerhorn Hall Young 3 82/120

STAT UN2104 Applied Categorical Data Analysis. 3 points.
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 2019: STAT UN2104
Course Number Section/Call Number Times/Location Instructor Points Enrollment
STAT 2104 001/71342 M W 2:40pm - 3:55pm 633 Seeley W. Mudd Building Neath 3 31/60
STAT UN3105 Applied Statistical Methods. 3 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.
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.

STAT UN3106 Applied Data Mining. 3 points.
Prerequisites: STAT UN2103. Students without programming experience in R might find STAT UN2102 very helpful. This course will be taught as a machine learning class. 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; students without programming experience in R might find STAT UN2102 very helpful.

STAT GU4203 PROBABILITY THEORY. 3 points.
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.

STAT GU4204 Statistical Inference. 3 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.

STAT GU4205 Linear Regression Models. 3 points.
CC/GS: Partial Fulfillment of Science Requirement
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.
STAT GU4206 Statistical Computing and Introduction to Data Science. 3 points.
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 2019: STAT GU4206
Course Number   Section/Call Number   Times/Location       Instructor       Points   Enrollment
STAT 4206       001/60750            F 10:10am - 12:40pm 203 Mathematics Building     Gabriel Young   3      56/80

Fall 2019: STAT GU4206
Course Number   Section/Call Number   Times/Location       Instructor       Points   Enrollment
STAT 4206       001/48449            F 8:40am - 11:25am 903 School Of Social Work     Gabriel Young   3      30/46

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 2019: COMS W1004
Course Number   Section/Call Number   Times/Location       Instructor       Points   Enrollment
COMS 1004       001/12775            M W 5:40pm - 6:55pm Room TBA           Paul Blaer     3      316/398

Fall 2019: COMS W1004
Course Number   Section/Call Number   Times/Location       Instructor       Points   Enrollment
COMS 1004       001/35930            M W 5:40pm - 6:55pm 417 International Affairs Bldg        Paul Blaer     3      361/400

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.