

APPLIED MATHEMATICS MAJOR CHECKLIST

Major Advisor: Professor Samuel Graff (sgraff@jjay.cuny.edu)

Prerequisites: MAT 141 Pre-Calculus may be required depending on mathematics placement

CORE (17 CREDITS)

Required courses:	Comments
<input type="checkbox"/> CSCI 171 - The Nature of Computers and Computing (Python I)	
<input type="checkbox"/> CSCI 172 - Introduction to Data Science (Python II)	
<input type="checkbox"/> MAT 151 - Calculus I	
<input type="checkbox"/> MAT 152 - Calculus II	
<input type="checkbox"/> MAT 265 - Elements of Mathematical Proof	

MATHEMATICS CORE (19 CREDITS)

Required courses:	Comments
<input type="checkbox"/> MAT 253 - Calculus III	
<input type="checkbox"/> MAT 301 - Mathematical Probability & Statistics I	
<input type="checkbox"/> MAT 302 - Mathematical Probability & Statistics II	
<input type="checkbox"/> MAT 310 - Linear Algebra	
<input type="checkbox"/> MAT 341 - Advanced Calculus	
<input type="checkbox"/> MAT 351 - Ordinary Differential Equations	

CONCENTRATION (9 CREDITS): Choose Cryptography or Data Science

CRYPTOGRAPHY	DATA SCIENCE
Required courses:	Required courses:
<input type="checkbox"/> CSCI 360 - Cryptography and Cryptanalysis	<input type="checkbox"/> CSCI 362 - Data Base and Data Mining
<input type="checkbox"/> MAT 410 - Abstract Algebra	<input type="checkbox"/> MAT 367 - Multivariate Analysis
<input type="checkbox"/> MAT 460 - Mathematical Cryptography (<i>Capstone</i>)	<input type="checkbox"/> MAT 455 - Data Analysis (<i>Capstone</i>)

ELECTIVES (6 CREDITS)

Choose two courses:	
<input type="checkbox"/> CSCI 358 - Machine Learning	
<input type="checkbox"/> CSCI 376 - Artificial Intelligence	
<input type="checkbox"/> CSCI 377 - Computer Algorithms	<i>Cryptography Concentration ONLY:</i>
<input type="checkbox"/> CSCI 421 - Quantum Computing	<input type="checkbox"/> CSCI 362 - Data Base and Data Mining
<input type="checkbox"/> MAT 352 - Applied Differential Equations	<input type="checkbox"/> MAT 367 - Multivariate Analysis
<input type="checkbox"/> MAT 354 - Multiple Regression Analysis	<input type="checkbox"/> MAT 455 - Data Analysis
<input type="checkbox"/> MAT 361 - Introduction to Functions of a Complex Variable	
<input type="checkbox"/> MAT 365 - Signal Processes	
<input type="checkbox"/> MAT 371 - Numerical Analysis	<i>Data Science Concentration ONLY:</i>
<input type="checkbox"/> MAT 3xx - Stochastic Processes	<input type="checkbox"/> CSCI 360 - Cryptography and Cryptanalysis
<input type="checkbox"/> MAT 380 - Selected Topics in Mathematics	<input type="checkbox"/> MAT 410 - Abstract Algebra
<input type="checkbox"/> MAT 385 - Faculty Mentored Research	<input type="checkbox"/> MAT 460 - Mathematical Cryptography
<input type="checkbox"/> MAT 411 - Abstract Algebra II	
<input type="checkbox"/> MAT 442 - Advanced Calculus II	
<input type="checkbox"/> MAT 4xx - Game Theory	
<input type="checkbox"/> MAT 4xx - Internship	