David Shuster: Math & Related Coursework

Course	Description	Grade
Multivariable Calculus		A
Linear Algebra	vector spaces, subspaces, linear independence, basis, and dimension; systems of linear equations and Gaussian elimination, matrix operations; linear transformations as matrices; eigenvalues and eigenvectors; inner product spaces	A
Intro Computer Science I		A
Groups, Rings and Fields	theory of groups and rings including the principal theorems on homomorphisms and the related quotient structures; integral domains, fields, polynomial rings	A
Intro to Stat Modeling		A+
Intro to Analysis	Completeness of the real numbers; convergence, bounded monotone sequences, Cauchy sequences, Bolzano-Weierstrass Theorem; countability, open and closed sets, compactness, Heine-Borel Theorem; Functions and continuity, Intermediate Value Theorem, continuous functions on a compact set, uniform continuity; Derivatives, Rolle's Theorem and Mean Value Theorem; Riemann integration; Uniform convergence of sequences and series of functions, continuity of the limit, derivatives and integrals of series, Weierstrass M-Test, power series	A+
Mathematical Logic	first-order languages, formal deductive systems; Completeness Theorem for first-order logic; Gödel Numbering and Incompleteness; Peano Arithmetic and the Second Incompleteness Theorem	A+
Intro Comp Science II	data abstraction, inheritance, and polymorphism; stacks, queues, linked lists, programming for graphical user interfaces, and basic topics in probability	A+
Mathematics of Public-Key Cryptography	Several topics from number theory, abstract algebra, and algorithms, including discrete logarithms, integer factorization algorithms, and elliptic curves	A+
Game Theory & Applicatn	applications-focused upper-level Economics Department course: Nash equilibrium, Stackelberg equilibrium, repeated games, evolutionary game theory, moral hazard, adverse selection, incomplete information and signaling, signaling with continuous actions	A
Voting and Elections: A Mathematical Perspective	majority rule, plurality rule, Borda count, and approval voting; Banzhaf power index; Arrow's Theorem	A+

Topology	topological spaces and continuous functions; subspace, quotient and product topologies; connectedness and compactness; separation axioms and metrizability; homotopy and the fundamental group; classification of surfaces	A+
Intermediate Statistics	parametric and nonparametric methods, resampling approaches, analysis of variance models, multiple regression, model selection, and logistic regression	A