NC STATE UNIVERSITY

Enrollment Management and Services
Department of Registration and Records

registrar.ncsu.edu

Campus Box 7313
1000 Harris Hall
Raleigh, NC 27695-7313
P: 919.515.2572

June 7, 2019

Below is a full list of classes Adam Geringer has taken at NC State. The information concerning the person indicated above has been obtained from records available in this institution at the time of the request.

Plan: Mathematics, Bachelor of Science
Plan: Minor in Cognitive Sciences

CSC 116: Introduction to Computing – Java Units: **3**

An introductory course in computing in Java. Emphasis on algorithm development and problem solving. Careful and methodical development of Java applications and applets from specifications; documentation and style; appropriate use of control structures; classes and methods; data types and data abstraction; object-oriented programming and design; graphical user interface design.

CSC 226: Discrete Mathematics for Computer Scientists Units: **3**

Propositional logic and the predicate calculus. Logic gates and circuits. Methods of proof. Elementary set theory. Mathematical induction. Recursive definitions and algorithms. Solving recurrences. The analysis of algorithms and asymptotic growth of functions. Elementary combinatorics. Introduction to graph theory. Ordered sets, including posets and equivalence relations. Introduction to formal languages and automata.

CSC 333: Automata, Grammars, and Computability Units: **3**

Study of three classical formal models of computation--finite state machines, context-free grammars, and Turing machines--and the corresponding families of formal languages. Power and limitations of each model. Parsing. Non-determinism. The Halting Problem and undecidability. The classes P and NP, and NP-completeness.

E 115: Introduction to Computing Environments Units: **1**

Introduction to the NC State computing system, and to student-owned computing resources. Includes topics such as maintaining your own computer, learning about campus-based computing resources and applications [how to access and use them], ethics and professionalism in the use of computing resources, introduction to web development and other campus resources.

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EC 205: Fundamentals of Economics Units: **3**

Fundamental ideas in economics: scarcity, substitution, opportunity cost, marginal analysis, gross domestic product, real and nominal magnitudes. Supply and demand analysis. Microeconomic analysis of pricing in competitive and noncompetitive markets. Macroeconomic analysis of production, employment, the price level, and inflation. Monetary and fiscal policy and the stabilization of the economy. Comparative advantage and international trade.

ENG 101: Academic Writing and Research Units: **4**

Intensive instruction in academic writing and research. Basic principles of rhetoric and strategies for academic inquiry and argument. Instruction and practice in critical reading, including the generative and responsible use of print and electronic sources for academic research. Exploration of literate practices across a range of academic domains, laying the foundation for further writing development in college. Continued attention to grammar and conventions of standard written English.

ENG 331: Communication for Engineering and Technology Units: **3**

Written communication in industrial and technical organizations, emphasizing internal communication with managers and technical personnel and including external communication with regulators, vendors, and clients. Intensive practice in writing; relationship of writing to oral and visual communication. For students in engineering and other primarily technological curricula.

HESF 102: Fitness Walking Units: **1**

This course is designed to teach and apply the principles of lifetime physical fitness, utilizing the five major components of cardio-respiratory endurance, muscular strength, muscular endurance, flexibility and body composition. A variety of health and wellness issues will be addressed. The components of fitness will be met through structured individually paced fitness walking techniques and strength conditioning exercises.

HESO 257: Backpacking Units: **1**

Designed for students with little or no backpacking experience. Safe and environmentally-sound camping practices. Equipment/clothing, first aid and safety management agencies, land navigation, and trip planning. Plan and participate in one required weekend fieldtrip.

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HON 345: On the Human Units: **3**

Students in this seminar course actively explore human singularity: the properties, if any, that distinguish persons from animals and machines. Do we have souls? To what extent can we give physical explanations of our thoughts and actions? What, if anything, do scientific experiments tell us about our differences from chimps and artificial intelligences? What are the ethical implications of new biotechnologies? Should we be allowed to use genetic and neural engineering to change human nature? Students read articles, watch videos, stimulate class discussions with prepared questions, write short essays and a final paper, and participate in a 60-minute team presentation.

LOG 335: Symbolic Logic Units: **3**

Intermediate level introduction to modern symbolic logic focusing on standard first-order logic; topics include proofs, interpretations, applications and basic metalogical results.

LOG 435: Advanced Logic & Metamathematics Units: **3**

Advanced topics in logic and metamathematics: proof procedures, first-order theories, soundness and completeness theorems, recursive functions, the formalization of arithmetic, the Goedel Incompleteness Theorems. Emphasis on mathematical study of logic and mathematics.

MA 401: Applied Differential Equations II Units: **3**

Wave, heat and Laplace equations. Solutions by separation of variables and expansion in Fourier Series or other appropriate orthogonal sets. Sturm-Liouville problems. Introduction to methods for solving some classical partial differential equations.Use of power series as a tool in solving ordinary differential equations.

MA 402: Mathematics of Scientific Computing Units: **3**

This course will provide an overview of methods to solve quantitative problems and analyze data. The tools to be introduced are mathematical in nature and have links to Algebra, Analysis, Geometry, Graph Theory, Probability and Topology. Students will acquire an appreciation of [I] the fundamental role played by mathematics in countless applications and [II] the exciting challenges in mathematical research that lie ahead in the analysis of large data and uncertainties. Students will work on a project for each unit. While this is not a programming class, the students will do some programming through their projects.

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MA 405: Introduction to Linear Algebra Units: **3**

This course offers a rigorous treatment of linear algebra, including systems of linear equations, matrices, determinants, abstract vector spaces, bases, linear independence, spanning sets, linear transformations, eigenvalues and eigenvectors, similarity, inner product spaces, orthogonality and orthogonal bases, factorization of matrices. Compared with MA 305 Introductory Linear Algebra, more emphasis is placed on theory and proofs.

MA 407: Introduction to Modern Algebra for Mathematics Majors Units: **3**

Elementary number theory, equivalence relations, groups, homomorphisms, cosets, Cayley's Theorem, symmetric groups, rings, polynomial rings, quotient fields, principal ideal domains, Euclidean domains.

MA 410: Theory of Numbers Units: **3**

Arithmetic properties of integers. Congruences, arithmetic functions, diophantine equations. Other topics chosen from quadratic residues, the quadratic reciprocity Law of Gauss, primitive roots, and algebraic number fields.

MA 225: Foundations of Advanced Mathematics Units: **3**

Introduction to mathematical proof with focus on properties of the real number system. Elementary symbolic logic, mathematical induction, algebra of sets, relations, functions, countability. Algebraic and completeness properties of the reals.

MA 341: Applied Differential Equations I Units: **3**

Differential equations and systems of differential equations. Methods for solving ordinary differential equations including Laplace transforms, phase plane analysis, and numerical methods. Matrix techniques for systems of linear ordinary differential equations.

MA 425: Mathematical Analysis I Units: **3**

Real number system, functions and limits, topology on the real line, continuity, differential and integral calculus for functions of one variable. Infinite series, uniform convergence.

MA 505: Linear Programming Units: **3**

Introduction including: applications to economics and engineering; the simplex and interior-point methods; parametric programming and post-optimality analysis; duality matrix games, linear systems solvability theory and linear systems duality theory; polyhedral sets and cones, including their convexity and separation properties and dual representations; equilibrium prices, Lagrange multipliers, subgradients and sensitivity analysis.

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MA 523: Linear Transformations and Matrix Theory Units: **3**

Vector spaces, linear transformations and matrices, orthogonality, orthogonal transformations with emphasis on rotations and reflections, matrix norms, projectors, least squares, generalized inverses, definite matrices, singular values.

OR 501: Introduction to Operations Research Units: **3**

OR Approach: modeling, constraints, objective and criterion. Problems of multiple criteria, optimization, model validation and systems design. OR Methodology: mathematical programming; optimum seeking; simulation, gaming; heuristic programming. Examples, OR Applications: theory of inventory; economic ordering under deterministic and stochastic demand. Production smoothing problem; linear and quadratic cost functions. Waiting line problems: single and multiple servers with Poisson input and output. Theory of games for two-person competitive situations. Project management through PERT-CPM.

PHI 205: Introduction to Philosophy Units: **3**

Introduction to selected problems of enduring philosophical importance, including such topics as the nature of morality, knowledge, human freedom, and the existence of God.

PHI 331: Philosophy of Language Units: **3**

Introduction to traditional and modern accounts of the relations between language and reality, the nature of truth, problems of intentionality and propositional attitudes.

PSY 420: Cognitive Processes Units: **3**

Introduction to research and theory in cognition, including such topics as memory, acquisition and use of language, reading, problem solving, reasoning, and concepts.

ST 370: Probability and Statistics for Engineers Units: **3**

Calculus-based introduction to probability and statistics with emphasis on Monte Carlo simulation and graphical display of data on computer workstations. Statistical methods include point and interval estimation of population parameters and curve and surface fitting [regression analysis]. The principles of experimental design and statistical process control introduced.

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SLC (Shelton Leadership Course) 250: Critical and Creative Decision Making Models Units: **3**

This course is designed for the student who wants to learn to think critically and creatively when making decisions taking into consideration a variety of decision making models across [sub] disciplines. Throughout the course, students will be presented a minimum of 4 models on decision-making and thinking processes across [sub] disciplines to consider when addressing different problems. Questions will be asked of students in a way that will foster critical and creative thinking in order to analyze, process, and identify effective ways for approaching a problem/situation using the models presented.

ARC 492: Special Topics in Architecture Units: **3** | **Course Topic:** Experiencing Cities

MA 591: Special Topics Units: **3** | **Course Topic:** Cryptography

PY 599: Special Topics in Physics Units: **3** | **Course Topic:** Applied Artificial Intelligence

ST 590: Special Topics Units: **3** | **Course Topic:** Stat Learning and Data Mining

USC 298: Special Topics in University Studies Units: **1** | **Course Topic:** Intro to Sustainability

Sincerely,

Louis D. Hunt, Ph.D.

University Registrar