

International Credit Program at Elmira College
Winter 2026 Course Listing as of 10/16/2025

Course Code	Course Title	Credits	Course Description
ARTH 1230	Objects and Identity	3	This course explores how material culture shapes our understanding of identity and history. Through careful examination of objects, students will learn to analyze their visual characteristics, origins, uses, and the contexts in which they exist. From prehistoric tools to modern technology, we will investigate how objects connect past and present, fostering a critical discourse on the value and interpretation of art and design across cultures and time periods.
ARTH 1060	The History of Art II	3	This is an immersive and comprehensive exploration of the history of art, architecture, and intellectual thought from a global perspective, spanning the Early Renaissance to the close of the nineteenth century. This course offers students an in-depth understanding of the evolution of artistic expression, the social and cultural contexts that shaped it, and the interplay between art and broader human history. Through the course, students will embark on a captivating journey through pivotal moments in art and architecture.
ARTH 1350	Fashion History	3	This course provides an overview of the history of Western dress and fashion from the ancient world to the present. Students will examine how costume reflects cultural, social, economic, political, and technological changes across civilizations. The course emphasizes the interrelationship between fashion and identity, as well as the influence of historical styles on modern design.
ARTH 2260	Introduction to Modern Art	3	This course offers an in-depth exploration of the evolution and transformation of artistic expression in the modern era, spanning roughly from the late 19th century to the mid-20th century. Students will engage with various art movements, key artists, and critical concepts that shaped the trajectory of modern art. The curriculum integrates historical context, theoretical frameworks, and critical analysis to foster a deep understanding of the diverse and revolutionary developments in the art world during this period.
ARTH 2350	Ancient Greek Theatre	3	This course offers an integrated study of Ancient Greek theatre, focusing on tragedy and comedy. Through close readings of the plays, students will explore the thematic, structural, and performative elements that contributed to the success and ongoing legacy of these works. The course will also examine the historical, social, and religious contexts in which these plays were originally performed and how they continue to create meaning on stage today. Special emphasis will be placed on the cultural significance of the theatre in ancient Greek society and its influence on modern drama.
ARTH 3105	Fundamentals of Theatrical Design	3	This course introduces students to the essential principles and practices of theatrical design, focusing on how visual and auditory elements contribute to storytelling in live performance. Students will explore the core areas of scenic, costume, lighting, and sound design, developing an understanding of the design process from concept to execution. Through lectures, case studies, and creative projects, the course emphasizes collaboration, script analysis, research, visual communication, and the integration of design elements to support dramatic action and emotional impact. No prior experience in theatre is required.
BCHM 4550	Human Nutrition	3	This course is a comprehensive exploration of human nutrition, covering the biological and chemical aspects of nutrients and their impact on human physiology. Topics covered include normal nutrition across the various stages of the life cycle, nutrition in sports, weight management strategies, and the consequences of inadequate nutrition on health.
BIOL 1244	Exploration to General Biology I	4	This course provides an introduction to the fundamental principles of biology, emphasizing the structure and function of living organisms, cellular processes, genetics, and evolution. Topics include the chemical and molecular basis of life, cell structure and function, metabolism, heredity, and the mechanisms of evolution. The course integrates scientific inquiry, experimental design, and data analysis to develop a foundational understanding of biological systems. This course is designed for students pursuing life sciences and related fields, preparing them for advanced biological studies.
BUSI 2212	Professional Business Writing	3	This comprehensive course is designed to equip students with the essential skills needed to communicate effectively within the dynamic and diverse environments of organizations, spanning corporations, government agencies, and non-profit organizations. The course focuses on developing students' proficiency in written communication, a critical aspect of professional success in various career paths that demand substantial interaction within and outside organizations.
BUSI 3132	Foundations of Management Information Systems	3	This course provides students with an integrated understanding of management information systems (MIS) and the practical application of Microsoft Excel and Access to solve real-world business problems. Emphasizing the role of technology in organizational management and strategy, the course explores how data is collected, stored, analyzed, and transformed into actionable insights. Through hands-on exercises and projects using Excel and Access, students will learn to design, implement, and manage data-driven business solutions. The course also prepares students with the skills and knowledge necessary to pursue Microsoft Office Specialist (MOS) certifications in Excel and Access.

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CHEM 1722	CHEM 1722 General Chemistry II	4	General Chemistry II is a continuation of General Chemistry I, focusing on advanced topics in chemistry including chemical equilibrium, thermodynamics, kinetics, electrochemistry, and descriptive inorganic chemistry. The course aims to deepen students' understanding of chemical principles and their applications in various fields of science and technology. Laboratory experiments and problem-solving exercises will reinforce theoretical concepts.
CHEM 2320	Organic Chemistry II	4	Organic Chemistry II is the continuation of Organic Chemistry I, focusing on advanced topics in organic chemistry. The course delves into the structure and reactivity of organometallic compounds, radicals, aldehydes, ketones, carboxylic acids and their derivatives, enolates, aromatic systems, amines, heterocyclic compounds, and modern methods and techniques in organic structure elucidation.
COMM 1080	Introduction to Public Speaking	3	This course is designed to develop students' skills in public speaking and to provide a comprehensive overview of the theories and practices that underlie effective communication. The content will be covered include: theory, practice, analysis, and ethics of public speaking. Students will learn how to analyze their audience and tailor their messages accordingly, how to organize their thoughts effectively, and how to do rhetorical choice and use various delivery techniques to engage and persuade their listeners.
COMM 3266	Public Relations	3	Advanced public relations course covers strategic principles, crisis communication, media relations, and ethics. Emphasis on critical thinking and practical exercises prepares students for real-world challenges, refining skills in media relations, image management, and ethical decision-making. Graduates excel as skilled practitioners in diverse corporate settings.
COMM 3801	Asia-Pacific Media	3	This course explores the dynamic and rapidly evolving media landscapes in the Asia-Pacific region, focusing on how global, regional, and local forces interact to shape media practices, cultures, and identities. Drawing from the key themes in Asia: Cultural Politics in the Global Age by David Birch, Tony Schirato, and Sanjay Srivastava, the course will critically engage with concepts such as modernity, postcoloniality, globalization, and the information age. Through interdisciplinary readings and discussions, students will gain a nuanced understanding of the media's role in shaping regional identities, the public sphere, and socio-cultural dynamics. The course will emphasize the challenges and opportunities presented by globalization, technological advancements, and the interconnectedness of the Asia-Pacific media sphere.
COMM 3927	Modern Political Communications	4	This course delves into the intricate interplay between media and politics, both domestically and internationally. It scrutinizes the evolving landscape of information dissemination and its impact on political figures and institutions. The course scrutinizes the concept of information as a source of power and delves into the ongoing tension between media entities and governmental bodies. Key topics include the significance of televised debates, the mechanics of political campaigns, and the dynamics of political conventions as orchestrated events. Additionally, it explores the notion of mediated realities, wherein media narratives shape public perceptions of political events.
COMM 4360	Mass Communication and Public Opinion	4	This course examines how mass media and communication shape public opinion, influence political behavior, and interact with institutions, campaigns, and collective action. Students will explore theoretical frameworks, empirical research, and real-world case studies across democratic and non-democratic contexts. Special attention will be given to media effects, polarization, misinformation, foreign policy communication, social movements, and emerging digital technologies. By the end of the course, students will be equipped to critically analyze how opinions are formed, expressed, measured, and mobilized in society.
COMP 1111	Programming for Data Science	3	Embark on a comprehensive journey into the realm of programming and data science with this introductory course. Delve into Python, a powerful language ideal for beginners, as you explore core concepts like data types, control flows, and functions. Extend your skills into data analysis, utilizing packages such as Pandas and Matplotlib to visualize and interpret data effectively. By the end, you'll possess a solid foundation to approach and solve real-world problems using computational methods.
COMP 1305	Computer Programming in Python	3	This course will use Python as our primary programming language and compare it to the structures in other high-level programs. It surveys fundamental concepts in computer programming and data science, including data types, functions, modules, classes, and methods. Additionally, it goes deeper into the testing and debugging of a program. Students are required to write and run basic programs.

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COMP 2036	Object Oriented Programming	3	This course serves as an introduction to the principles and practices of object-oriented programming (OOP) using Python as the primary language. Students will explore the foundational concepts of OOP such as classes, objects, encapsulation, inheritance, and polymorphism. The course emphasizes problem-solving through software design and implementation, and introduces real-world applications of OOP including modularity, reusability, and abstraction. Learners will develop both conceptual understanding and practical coding skills, enabling them to build efficient, maintainable, and scalable applications.
COMP 2050	Introduction to Computer Science	4	This course serves as a general introduction to computer science, aimed at dispelling the mystery surrounding computers. The computer is presented as a versatile tool capable of solving a wide range of problems. On one level this course teaches students programming concepts, in particular, binary logic and algorithmic problem solving. On another level this course uses programming as a means to an end, focusing on understanding the fundamental problems within computer science, such as looping, searching, sorting, and data structure.
COMP 2112	Data Structures and Algorithms	3	In this course, students engage with advanced programming by exploring the synergy between data structures and programming language features. The course emphasizes the design of large-scale software systems, focusing on object-oriented programming, data abstraction, polymorphism, and higher-order functions. Through a blend of theory and practical applications, students gain proficiency in crafting flexible, efficient, and scalable code structures. The course empowers participants to navigate complex programming challenges and contribute effectively to the development of sophisticated software systems.
COMP 2190	Problem Solving and Reasoning for Computer Scientists	3	This course introduces students to the cognitive strategies, environments, and skills necessary for effective problem solving, with a focus on reasoning applicable to computer science. Students will explore various types of problems—from verbal and mathematical to logical and analogical — and learn structured approaches for analysis, solution generation, and implementation. Emphasis is placed on developing clarity of thought, identifying patterns, understanding fallacies, and communicating solutions effectively. The course will incorporate hands-on exercises, real-world scenarios, and pair problem-solving techniques to develop a deeper understanding of critical thinking and problem-solving methods in both academic and workplace contexts.
COMP 3120	Operating Systems	3	This course provides a comprehensive introduction to the fundamental concepts, theories, and design principles of operating systems. Topics covered include operating system structures, process management, memory management, synchronization, deadlocks, file systems, CPU scheduling, and virtual memory. Students will explore both theoretical underpinnings and practical implementations of operating systems, as well as concepts related to protection and security, distributed systems, and real-time operating systems. By the end of the course, students will have a solid understanding of how operating systems function, manage hardware resources, and ensure system stability and security in a multi-user environment.
COMP 3125	Software Engineering	3	This course provides an in-depth exploration of both object-oriented and traditional software engineering methodologies, building upon the foundational analysis and design concepts previously introduced. It encompasses a comprehensive study of the entire software development lifecycle, from requirements gathering and system design to implementation, testing, and maintenance. The curriculum places significant emphasis on object-oriented principles and the application of the Unified Modeling Language (UML) to model and document software systems. Key topics include the fundamentals of software engineering, such as requirements engineering, software design patterns, system architecture, and quality assurance. The course also covers essential aspects of project management, including planning, scheduling, and risk assessment, to equip students with practical skills for real-world software development projects. Through a combination of lectures, hands-on projects, and case studies, students will gain a thorough understanding of modern software engineering practices and the ability to apply them in diverse development environments.
COMP 3370	Digital Communications	3	An introduction to the fundamental principles of digital communications. It covers essential topics such as signals and systems, Fourier transforms, power spectral density, and digital modulation techniques. Students will explore signal sampling and digitization, baseband and carrier modulation schemes, and techniques for detecting signals in the presence of noise. The course also delves into transmitter and receiver architectures, and signal-to-noise ratio (SNR). By the end of the course, students will gain a strong theoretical and practical foundation in digital communication systems.

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COMP 3410	Computer Organization	3	This course introduces the principles of computer organization and the hardware and software interface. Students will learn the fundamental abstractions of computer systems, instruction set architectures, data path and control design, memory hierarchy, and parallel processing. Emphasis is placed on both theory and practice, with assignments in performance analysis, assembly programming, simulation, and processor design.
COMP 3691	Artificial Intelligence	4	Starting from many practical situations, this course will provide students with the basic concepts and techniques to help students understand artificial intelligence. The course will also cover ethical considerations and real-world applications of artificial intelligence. Students will learn the fundamentals of artificial intelligence, including problem solving, machine learning and natural language processing, AI programming and development. The goal is to provide students with practical hands-on skills to solve AI problems through programming assignments.
COMP 3960	Systems Programming	4	This course provides a comprehensive introduction to systems-level programming in the C language, emphasizing both fundamental and advanced programming concepts in a Unix environment. Students begin by mastering C syntax, data types, control structures, and formatted input/output. Through hands-on computer labs, they progressively learn about arrays, functions, pointers, strings, and preprocessor directives. The course transitions into the design and organization of larger programs using structures, unions, and enumerations, and explores advanced pointer techniques, low-level memory manipulation, and program modularization. Students will also gain familiarity with the Unix system interface, standard C libraries, and best practices for program design and debugging. Throughout the course, emphasis is placed on understanding how C programs are built and executed, writing efficient and maintainable code, and using system-level features for performance and reliability. Regular lab sessions reinforce learning and provide practical experience in building, testing, and troubleshooting C programs in a professional development environment.
COMP 4012	Computer Networking	3	This course provides a comprehensive introduction to computer networking concepts, architectures, protocols, and technologies. Students will explore both theoretical foundations and practical implementations spanning from physical transmission to security and application-layer services. The course follows a layered approach aligned with major reference models such as OSI and TCP/IP.
ECON 1060	Introduction to Microeconomics	3	This course offers students a fundamental understanding of microeconomic principles. It covers supply - demand, consumer behavior, production, and more. Through lectures, readings, discussions, and exercises, students gain analytical tools to grasp microeconomic concepts and real - world economic issues.
ECON 1080	Introduction to Macroeconomics	3	This course provides students with a comprehensive understanding of the principles, concepts, and analytical tools that govern the study of the broader economic system. Topics contain the components of aggregate demand, national income determination and multiplier theory, business cycles and more. Through a blend of theoretical exploration, real-world applications, and critical thinking exercises, this course offers a solid introduction to the macroeconomic factors that shape national economies and impact global markets.
ECON 2043	Macroeconomic Theory	3	This course is an advanced course that builds upon the foundational concepts introduced in Macroeconomic Theory I, delving deeper into the analysis of macroeconomic phenomena, exploring the dynamics of aggregate economic variables. Topics include national income, employment, the rate of interest, the price level and more. The course is designed for students with a solid understanding of basic macroeconomic principles who wish to gain a more comprehensive and nuanced understanding of macroeconomic theory and its applications.
ECON 2104	Intermediate Microeconomics I	3	This course offers an in-depth analysis of key concepts and models used to understand the behavior of consumers, firms, and markets. This course will explore core areas of microeconomic theory, including economic methodology, consumer theory, the theory of the firm, competitive markets, and efficiency. Emphasis will be placed on understanding how these theories apply to real-world economic policies and decision-making processes. Students will gain insight into how microeconomic principles influence public policy decisions, focusing on how market structures and behavior shape economic outcomes and the role of government intervention.
ECON 3051	Econometrics	3	This course introduces students to the fundamental concepts and techniques of econometrics, focusing on economic applications of statistical methods. Students will learn how to use simple and multiple regression analysis to analyze economic relationships, test hypotheses, and make economic predictions. By the end of the course, students will be able to critically evaluate economic models and apply econometric techniques to real-world economic problems.

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ECON 3510	Economics of Less Developed Countries	4	This course examines the economic conditions, challenges, and opportunities in less-developed regions. It explores the factors contributing to underdevelopment, the role of government and international institutions, and strategies for sustainable economic growth and poverty alleviation. Students will develop analytical skills to evaluate development issues and propose evidence-based solutions.
ECON 4225	Public Economics and Fiscal Policy	3	This course provides an analytical examination of the economics of the public sector, focusing on equity and efficiency as primary criteria for public decision-making. It encompasses a study of public choice theory, expenditure theory, public goods, externalities, public provision of private goods, theory of taxation including tax incidence and tax neutrality, principles of fiscal policy, economic stabilization, government borrowing, and federal-provincial fiscal relationships. The course emphasizes technical proficiency and covers core topics in public economics, incorporating both classical and frontier research through theoretical models and empirical analysis.
ECON 4605	Applied Econometrics	3	This course provides a comprehensive introduction to econometrics, focusing on practical application and empirical analysis. Students will learn to construct, estimate, and interpret regression models using real-world data, emphasizing evidence-based insights. Topics include model estimation, hypothesis testing, diagnostic testing, and case studies to reinforce data-driven economic reasoning.
ENGL 1140	College Writing	3	The College Writing is designed to introduce students to various writing genres and help them develop effective communication skills through written expression. The course will focus on the writing process, emphasizing key aspects of academic writing and expository prose. Students will engage in both creative and analytical writing tasks, developing their abilities in crafting clear, coherent, and well-organized texts. Topics covered will include sentence-level issues, paragraph structure, rhetorical strategies, organization, style, and form. By the end of the course, students will be equipped with the skills needed to write effectively in academic and professional settings.
ENGL 1251	Rhetoric and Composition	3	This course introduces students to rhetorical concepts, teaching them to apply these principles in crafting diverse genres of writing tailored to specific rhetorical contexts. Through iterative revision, students refine their drafts, editing their work to achieve polished texts, and engaging in reflective analysis of their writing process. Additionally, students practice reading complex texts and utilizing information technologies.
ENGL 1500	Selected Topics in Literature	3	This course is designed to enhance students' critical reading skills and cultivate their abilities in coherent discourse through the exploration of selected topics in literature and composition. Emphasizing the proper use and acknowledgment of sources, students will engage in discussions and complete written assignments based on readings from various genres. The course aims to develop analytical thinking, writing proficiency, and a deeper appreciation for literature.
ENGL 1544	Introduction to Rhetoric and Academic Research	3	This course is a comprehensive course designed to equip students with the essential skills of persuasive writing and effective communication within the context of academic research. It emphasizes the development of clear, concise, and logically structured arguments supported by evidence derived from rigorous research practices across diverse fields of study. Students will delve into the art of rhetoric as a means to analyze, critique, and produce persuasive texts, both written and spoken.
ENGL 2155	Writing Social Science Research	3	This course develops students' ability to write clear, persuasive, and research-based work in the social sciences. Students will practice multiple genres, including journal articles, literature reviews, research proposals, policy briefs, and fieldwork reports, while strengthening skills in argumentation, synthesis, data analysis, and revision. Emphasizing the link between strong research and strong prose, the course prepares students to write for both academic and public audiences. Through an independent research project, workshops, and peer review, students will build sustainable writing habits and prepare for graduate study, publication, and professional applications.
EXSC 3313	Nutrition and Exercise Science	3	This course explores the scientific and applied principles of nutrition for athletic performance, recovery, and long-term health. Students will analyze the metabolic demands of various sports, evaluate evidence-based dietary strategies, and develop nutrition plans tailored to athletes across training cycles and competitive levels. Students will also delve into the principles of exercise nutrition, learning how to create effective dietary plans to support various types of physical activity, from endurance training to strength and conditioning.
GEOG 4120	Climate Change Communication	3	Exploring how climate change is communicated across audiences, institutions, and media, this course delves into the role of messaging in advancing climate policy, ethical considerations, and the intersection of science, politics, and media. Using theoretical frameworks, case studies, and practical strategies, students examine how climate discourse is shaped by individual, institutional, and cultural contexts, fostering skills to engage effectively in climate communication.

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HIST 2022	U.S. History Since 1877	3	This course offers a comprehensive exploration of the United States' historical evolution since 1877. It delves into the multifaceted tapestry of American society, with a strong emphasis on the incredible diversity of the American people. Throughout the semester, we will engage in a detailed examination of how an American society comprising numerous cultures and ethnicities has evolved, adapted, and transformed over the past century and a half.
HLTH 4066	Research and Analysis in Nutrition Science	3	This course provides students with a comprehensive foundation in the design, conduct, and analysis of research in Nutrition and Food Science. Drawing on leading texts in the field, students will explore statistical methodologies, experimental designs, data interpretation, and reporting practices. Emphasis is placed on applying statistical principles to real-world nutrition and food science data, with extensive hands-on training using SPSS. By the end of the course, students will be able to critically evaluate research, design rigorous studies, and competently analyze and report data in line with academic and professional standards.
MARK 1300	Introduction to Marketing	3	This course introduces the basic principles of marketing, covering key concepts and processes such as customer relationship management, marketing planning, understanding customers and competitors, developing marketing strategies (segmentation and positioning), and marketing programs (products, pricing, channels, communication). The course will discuss strategic-level marketing concepts and specific analytical methods. Additionally, it will cover topics such as ethical issues in marketing, corporate social responsibility, and the impact of technology on marketing.
MATH 1526	Introduction to Calculus I	4	Calculus I is an introductory course in calculus, designed to provide students with a solid foundation in differential and integral calculus. The course focuses on the fundamental concepts and techniques of calculus and their applications to solve various mathematical problems. This course serves as a prerequisite for higher-level mathematics and science courses.
MATH 2245	Multivariable Calculus	3	This course extends the principles of calculus from single-variable functions to functions with multiple variables. Topics include vectors, vector-valued functions, Green's Theorem, Stokes' Theorem, and Gauss' Theorem, multivariable functions, partial derivatives, multiple integrals, line integrals, surface integrals, vector fields, and their applications. Additionally, students will explore applications in physics, engineering, and other fields.
MATH 2246	Calculus with Analytic Geometry III	3	This course is the third part of a multi-semester sequence in calculus with analytic geometry. It builds on previous calculus courses by introducing advanced concepts in multivariable calculus, vector analysis, and their applications in real-world problems. Topics include vector algebra, vector-valued functions, partial derivatives, multiple integrals, vector fields, and the fundamental theorems of vector calculus. This course is designed for students pursuing mathematics, physics, engineering, or other fields that require a strong foundation in advanced calculus.
MATH 2423	Probability	3	This course offers an overview of probability theory and its applications in various scientific fields. The course covers the mathematical treatment of random events occurring in natural, physical, and social sciences. Topics include mathematical probability axioms, combinatorial analysis, binomial distribution, Conditional probability and independence, Poisson distribution, normal distribution, random variables, probability distributions, moments, sampling distributions, expectations, and limit theorems.
MATH 2501	Abstract Linear Algebra	3	Dive into fundamental concepts like vector spaces, linear transformations, and matrices. Study properties of linear independence, basis, and dimension. Analyze methods for solving systems of linear equations and diagonalization. Explore applications in computer science, physics, and engineering for data analysis and modeling. This course equips students with crucial algebraic tools for advanced mathematical studies.
MATH 2849	Elementary Differential Equations and Laplace Transformations	3	This course is designed to provide a comprehensive introduction to the theory and application of Ordinary Differential Equations (ODEs) with a special focus on solving them using the powerful Laplace Transform. Throughout the course, students will engage in hands-on exercises and computational assignments using mathematical software to solve ODEs and apply the Laplace Transform to various problems. Topics include First order equations, Linear differential equations of higher order, Differential operators, Laplace transforms and more.

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MATH 2851	Foundations of Stochastic Processes	3	This course provides a foundational understanding of stochastic processes, focusing on key concepts such as Markov chains, random walks, martingales, Galton-Watson trees, branching processes, Poisson processes, point processes, birth and death processes, queuing theory, stationary processes, as well as simulation and inference for stochastic models. Through theoretical study and practical applications, students will develop the necessary tools to analyze and model random phenomena in various fields including mathematics, statistics, engineering, and finance.
MATH 3006	Abstract Algebra	3	This course explores the foundational concepts and structures of abstract algebra, emphasizing integers, sets, groups, and rings. Topics include properties of integers, group theory (with a focus on permutation and cyclic groups), Lagrange's theorem, subgroups, normal subgroups, quotient groups, and the external direct product of groups. Additionally, the course introduces homomorphisms, isomorphisms, rings, and fields. The focus is on understanding these concepts through rigorous proofs and practical applications in mathematics and related fields.
MATH 3010	Regression Analysis	3	Regression Analysis estimates relationships between independent variables and a dependent variable. This course is intended to introduce the basic ideals and models of regression analysis, including its interpretation and implementation in the statistical software package. Topics of simple linear regression, multiple linear regression, least-squares estimation, hypothesis testing, transformations, generalized and weighted least squares, multicollinearity, variable selection and model building, nonlinear regression model will be included.
MATH 3100	Applied Linear Algebra	3	This Applied Linear Algebra course centers on the practical uses of linear algebra. Starting from fundamental concepts, it uncovers their real - world significance and problem - solving techniques. Students study vector spaces, linear equations, eigenvalue problems, orthogonality, least squares, and more. By the end, they're equipped with the skills to apply linear algebraic methods to analyze and resolve real - life issues, bridging theory and practice.
MATH 3418	Linear Optimization Techniques	3	This quantitative course is designed to provide students with a comprehensive understanding of mathematical techniques for optimizing linear objective functions subject to linear equality and inequality constraints. The course covers essential topics such as linear programming modeling, the simplex method and its variants, duality theory, post-optimality analysis, and applications in various fields. Additionally, students will explore relevant software tools to implement and solve linear optimization problems.
MATH 3500	Applied Machine Learning	3	This course introduces students to a wide range of machine learning techniques and tools used in data analysis, predictive modeling, and pattern recognition. The course covers a comprehensive range of topics, such as multivariate linear and multiple regressions, k-nearest neighbors and bootstrap. And it also introduces some typical Statistical Learning methods, including naive Bayes, cross-validation, tree-based methods and so on. Through a combination of theoretical concepts and practical applications, students will gain a solid foundation in machine learning methods.
MATH 4888	Measure Theory and Integration	3	This course is an introductory-level exploration of Fourier analysis, grounded in the theoretical framework of a key textbook. Fourier analysis is a cornerstone of mathematical analysis, bridging abstract measure theory, functional analysis, and concrete applications in signal processing, partial differential equations, and harmonic analysis. The course starts with foundational concepts from real and complex analysis — including Lebesgue measure, integration, and Hilbert space theory—then builds toward core Fourier analysis topics: Fourier series on the unit circle, Fourier transforms on Euclidean space, and their key properties. Students will develop both theoretical rigor and intuitive understanding, using the text to link abstract analysis to Fourier methods. By the end of the course, students will be able to apply Fourier techniques to solve problems in analysis and interpret their relevance in cross-disciplinary contexts.
MECH 2932	Introduction to Systems Engineering	3	Complex problems in science, engineering, and management often require an integrated understanding of systems—their structure, behavior, and interconnections. The course explores the essential ideas behind systems thinking, modeling, and problem-solving within an interdisciplinary framework. Students will learn how to represent, analyze, and design systems through a logical structure of information flow and feedback. Emphasis is placed on conceptual frameworks, system modeling methodologies, and the use of system concepts to address real-world challenges.

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MGMT 2400	Corporate Strategy and Leadership	3	This course is designed to equip students with the critical skills and strategic thinking necessary for success in dynamic and competitive business environments. It emphasizes the development of leadership capabilities, strategic decision-making, and business mindsets. Through the exploration of frameworks such as Agile, Lean, and Design Thinking, students will enhance their ability to lead teams, foster collaboration, and drive business growth. Core themes include team dynamics, leadership development, negotiation strategies, career progression, and promoting ethical and sustainable business practices. Interactive discussions and practical exercises will empower students to make impactful decisions, advance their careers, and contribute to organizational success.
MGMT 3720	Human Resource Management	3	This comprehensive course in Human Resource Management (HRM) is designed to provide students with a deep understanding of the critical role that human resources play in organizations. Through a combination of theoretical knowledge and practical application, students will gain the skills necessary to excel in the dynamic field of HRM. Topics include human resource management (HRM), the strategic role of HRM, human resource planning, staffing, performance management and more.
MUSC 2768	Music of the African Diaspora	3	This course examines the musical legacy of the African diaspora, beginning with traditional African music and its transformation through contact with European and Islamic cultures. It follows the emergence of Afro-American musical styles in South and Central America, the Caribbean, and North America, including spirituals, blues, and jazz. The course also explores modern urban popular music in postcolonial Africa and the ongoing global exchange of musical forms.
PHIL 1230	Reasoning and Critical Thinking	3	Reasoning and Critical Thinking is a course designed to help students develop the essential skills of logical reasoning and critical thinking. Students will learn how to analyze and evaluate arguments, distinguish between valid and invalid reasoning, and identify common fallacies. The course will cover topics such as deductive and inductive argument, logical structures, evaluation of arguments, and the scientific method, etc. Through readings, discussions, and assignments, students will develop their ability and acquire practical techniques to think critically, communicate effectively, and make sound judgments.
PHIL 2520	Social Philosophy	4	This course explores how society is structured and how power operates within it. We will explore how social structures, institutions, and ideologies shape identity, power, freedom, and justice. Topics include how gender and race affect social standing, how class influences political and economic life, and how major philosophical traditions—liberalism, critical social theory, and postmodernism—analyze, justify, or challenge existing social institutions.
PHYS 1401	Physics for Life Sciences I	4	The primary goal of this course is the presentation of selected principles and topics in physics with applications to the life sciences. Main topics will involve mechanics, work, energy and power, linear momentum and impulse, angular momentum, rotational motion, heat and the first law of thermodynamics. Students in this course are required to have basic knowledge of calculus and analytical methods.
PHYS 1536	Introductory Mechanics	4	This course provides an introduction to the fundamental concepts of mechanics, covering the dynamics of particles and rigid bodies using vectors and calculus. Students will explore topics such as conservation of energy and momentum, as well as kinetic theory. These concepts serve as the cornerstone for understanding various principles in the physical sciences and engineering disciplines.
PHYS 1552	Physics for Life Sciences II	4	Physics for Life Sciences II is a continuation of the introductory Physics for Life Sciences I course, designed specifically for students pursuing studies in the life sciences. This course provides a comprehensive introduction to the principles of electricity and magnetism. It covers the fundamental concepts, laws, and applications of electromagnetism. Students will explore electric fields, magnetic fields, electromagnetic waves, and their interactions with matter. The course includes both theoretical foundations and practical applications, with a focus on developing problem-solving skills.
PHYS 4370	Quantum Mechanics	4	This course offers a rigorous introduction to the foundations and applications of quantum mechanics. Beginning with experimental motivations such as the Stern–Gerlach experiment, students will learn how quantum states are represented mathematically, how they evolve in time, and how measurements affect physical systems. Core topics include quantized energy levels, wave mechanics, angular momentum, and perturbation theory. The course progresses to multi-particle systems, identical particles, symmetries, and modern applications such as quantum tunneling, hyperfine interactions, and periodic potentials relevant to solid-state physics.
PSYC 2040	Introductory Psychology	3	This introductory course offers a comprehensive exploration of the fascinating field of psychology, providing students with a foundational understanding of the mind, behavior, and the scientific principles that underlie psychological research. Through a combination of lectures, readings, discussions, and practical exercises, students will embark on a journey to unravel the complexities of human thought and behavior.

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PSYC 3252	Introduction to Cognition	3	This course explores the fundamental theories, research, and applications related to cognitive development from infancy through adulthood. Topics include perception, attention, memory, language acquisition, problem-solving, executive function, and the influence of culture and environment on cognitive growth. Emphasis is placed on contemporary research findings and their practical implications for education, parenting, and cognitive enhancement strategies.
SOCI 2130	Sustainable Systems	3	This course introduces the concept of sustainable systems and explores a systems-based approach to sustainability. It covers the analysis and design of sustainable agricultural, food, environmental, energy, water, and societal systems. Students will learn how to create products, systems, and services that are socially, environmentally, and economically sustainable. The course emphasizes a multidisciplinary perspective, integrating insights from climate change, materials science, energy, and water management. The goal is to equip students with the knowledge and tools needed to address global sustainability challenges by fostering innovation in sustainable practices.
SOCI 3890	Engineers in Society	3	Engineers create technologies and systems intended to enhance human life, yet these innovations can produce uneven outcomes—benefiting some communities while disadvantaging others. This course invites students to critically examine the ethical, professional, and societal responsibilities of engineers in a globalized and technology-driven world. Students will explore how engineering decisions intersect with issues of equity, sustainability, globalization, artificial intelligence, and corporate responsibility. Through theoretical inquiry and real-world case studies, students will cultivate the ethical reasoning, professional judgment, and moral imagination needed to navigate the complex impacts of engineering on diverse local and global populations.
SOCI 4815	Social Work Practice With Families	3	Focusing on the family as a dynamic and interconnected system, this course explores theories, practices, and intervention strategies relevant to social work with diverse family structures. It examines family roles, rules, relationships, communication patterns, and the influence of cultural, economic, and psychosocial factors on family functioning. Students will learn to assess family systems and apply evidence-based approaches to support families in managing life challenges, mental health issues, intergenerational conflict, and transitions such as divorce or migration. Emphasis is placed on ethical, culturally sensitive, and strengths-based social work practice with families across the life course.
STAT 1200	Introductory Probability and Statistics	3	This course serves as a foundational exploration of Probability and Statistics, equipping students with essential tools to understand and analyze uncertainty in various real-world scenarios. The curriculum encompasses key concepts in conditional probability, independence, discrete and continuous random variables, mean and variance, descriptive statistics, and statistical inference.
STAT 3250	Nonparametric Statistical Methods	3	This course systematically introduces basic concepts and practical methods of nonparametric statistics. Topics will include confidence interval, Walsh averages, signed rank test (Wilcoxon), one-sample t-test, two-sample procedures, Medians Equal, Kolmogorov - Smirnov test, Kruskal - Wallis test, Spearman's rank, Chi-Square Test, and ranked set sampling. In this course, students are required to launch a final project and conclude a data report to demonstrate their proficiency in applying appropriate nonparametric methods.
STAT 4202	Mathematical Statistics	3	An advanced course designed to provide a rigorous foundation in mathematical statistics. This course will delve into the core concepts and methods used in statistical inference, including point estimation, interval estimation, and hypothesis testing. Students will learn how to develop and evaluate statistical models, estimate parameters, and make inferences about populations based on sample data. The course emphasizes both theoretical foundations and practical applications, preparing students for further study or work in statistics, data science, and related fields.