International Credit Program at Elmira College
Summer 2026 Course Listing as of 2/11/2026

Course Code	Course Title	Credits	Course Description
ACCT 3550	Introduction to Auditing	3	This course introduces the fundamental concepts, standards, and practices of auditing with an emphasis on financial statement audits. Students will learn the auditing process from engagement acceptance through audit reporting, including audit planning, risk assessment, internal control evaluation, evidence collection, sampling, and professional judgment. The course also covers ethical responsibilities, legal liability, and the expanding role of assurance services.
ACCT 4252	Advanced Financial Accounting	3	Students are introduced to accounting for capital combination. The increasing importance of complex topics in financial reporting, including accounting for business combinations, special purpose entities, foreign currency transactions, consolidating foreign subsidiaries, and ethics and policy issues for the profession is also explored. The course aims to provide students with a deep understanding of these topics and their practical applications in the business environment.
ANTH 1105	Foundations of Biological Anthropology	3	This course is a comprehensive exploration of the fascinating field that examines the biological and evolutionary aspects of human beings, providing a solid foundation in the scientific study of human origins, evolution, genetics, and the relationship between biology and culture. Students will gain a deeper understanding of the biological factors that have shaped human diversity, behavior, and adaptation.
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 2143	Eighteenth-Century European Art	3	Eighteenth-century European art embodies a period of profound cultural, social, and political transformation. Through the close examination of painting, sculpture, architecture, and decorative arts, this course explores the aesthetic developments of the century, from the splendor of Rococo to the intellectual rigor of Neoclassicism. Students will analyze how art was created, the conditions of artistic production, and the shifting roles of artists within religious, political, and aristocratic patronage systems. Topics include artistic techniques and materials, the circulation of objects and ideas, and the intersection of art with Enlightenment thought, colonialism, and emerging modernity.
ARTH 2260	Introduction to Modern Art	3	This course offers an in-depth exploration of the evolution and transformation of artisticexpression 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 3440	Operations Management In Printing Industry	3	This course is designed to provide students with an in-depth understanding of operations and process management within the printing industry. It encompasses a broad array of subjects essential for overseeing the production and workflow in printing establishments. Students will explore the detailed workings of printing operations of the industry, starting from the preliminary job preparation phase through to the ultimate distribution of printed goods. The syllabus highlights the significance of achieving efficiency and accuracy at each stage of the process, ensuring that students are fully prepared to address the distinctive challenges inherent in the printing industry.

ARTH 4300	Contemporary Chinese Popular Culture	3	This course explores contemporary Chinese literature and popular culture from the end of the Mao era to the present. Students will study fiction, poetry, and essays that reflect China's social transformations in the context of reform, opening, and globalization. Special emphasis will be placed on how literature interacts with popular culture, including film, visual media, music, and the rise of urban youth culture.
BIOL 2753	Exploration to General Microbiology	4	General Microbiology provides a comprehensive exploration of the principles and diversity of microorganisms. The course covers fundamental aspects of microbial biology, including their characteristics, classification, physiology, genetics,clinical microbiology, and an introduction to differentiation. Students will gain a profound understanding of the roles microorganisms play in various environments, industries, and their significance in biological sciences.
BIOL 3250	Developmental Biology and Physiology	4	This course comprehensively explores the principles of development and comparative physiology. It enables students to deeply study the intricate processes of organism growth, development, and the physiological mechanisms maintaining life, fostering a holistic understanding.
BIOL 3900	Immunology	4	This course explores how immune cells and their functions coordinate defense mechanisms against pathogens, while also examining the immune system's role in autoimmune disorders, allergic reactions, and cancer. Students will develop a foundational understanding of immunological processes, including their cellular and molecular mechanisms.
BUSI 2621	Business and Commerical Law	3	This comprehensive course is designed to equip students with a robust understanding of the intricate legal principles governing corporations and corporate finance within legal landscape. The primary focus is on the regulatory environment that shapes corporate activities and financial markets. Participants will delve into the dynamic world of business entities, exploring key legal obligations and ramifications throughout the entire lifecycle of a company.
CHEM 1721	General Chemistry I	4	General Chemistry I is an introductory course that provides students with a foundational understanding of the principles and theories of chemistry. Topics covered include atomic structure, chemical bonding, stoichiometry, kinetic molecular description of the states of matter. Emphasis will be placed on developing problem-solving skills and critical thinking in the context of chemical phenomena. Laboratory experiments and demonstrations will complement theoretical concepts to enhance understanding.
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.
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 3360	Audio Storytelling & Podcasting	3	This course introduces students to the craft of creating compelling audio stories, drawing inspiration from public radio programs and narrative podcasts. Students will learn to conceive, research, write, and produce engaging stories for audio platforms. Emphasis is placed on conversational writing, in-depth journalistic reporting, and long-form storytelling. Students will acquire skills in interviewing, story mapping, remote and field recording, multi-track editing, mixing, and final production for broadcast or podcast distribution. The course balances theory and practice, guiding students through each stage of production-from pitch to polished piece.
COMM 3430	Digital Games and Society	3	Digital games have become a powerful and influential medium that extends far beyond entertainment. This course examines the complex relationship between games and society, exploring how games shape—and are shaped by—culture, psychology, identity, and technology. Students will critically engage with research and debates surrounding both the positive and negative impacts of gaming on individuals and communities.
COMP 1220	Data Analysis with Excel	3	This course centers on Microsoft Excel as a core tool for conducting numerical calculations, data analysis, regression analysis, and developing scientific graphs. With a strong emphasis on its applications in chemistry, biochemistry, and allied scientific fields, it will walk students through leveraging advanced Excel techniques to solve equations, manipulate datasets, and analyze experimental findings. By the conclusion of the course, learners will have established a firm grasp of how to utilize Excel's built-in functions and tools to carry out scientific data processing, visualization, and interpretation effectively.
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.
COMP 1500	Discrete Mathematics for Computer Science	3	This course introduces fundamental concepts in discrete mathematics with a focus on applications in computer science. It provides a theoretical foundation for various aspects of computer science, including algorithms, data structures, and formal methods. Topics covered include logic, set theory, relations, functions, combinatorics, graph theory, and mathematical induction. Emphasis is placed on developing problem-solving skills and applying mathematical reasoning to solve real-world problems in computer science.
COMP 2073	Digital System	3	This course covers the principles of digital design, including Boolean algebra, logic gates, sequential and combinational circuits, and memory systems. Students will learn to design and analyze digital systems using Verilog, and explore advanced topics like FPGAs, ASICs, and programmable logic devices. Hands-on practice and real-world applications will help students gain a comprehensive understanding of digital circuit design.
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 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 introduces students to the principles and practices of object-oriented programming (OOP) using C++. Emphasizing key OOP concepts such as encapsulation, inheritance, and polymorphism, the course provides a strong foundation in C++ syntax, structures, and libraries. Students will develop problem-solving skills through practical exercises, labs, and programming projects, enabling them to design and implement efficient, reusable, and maintainable software.
COMP 3350	Computer Systems Integration	3	This course provides an in-depth exploration of the fundamental components that constitute computer systems, starting from the foundational level of digital logic and hardware gates and extending to the complexities of compilers, programming languages, and software applications. The primary objective of this course is to offer students a comprehensive understanding of the hierarchical structure of computer systems and to demonstrate how the implementation of straightforward interfaces can facilitate the creation of sophisticated and robust computing solutions.
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 featu es 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.

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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.
COMP 4780	Interaction Design and Technology	4	This course introduces students to the principles, processes, and methods of interaction design. Students will explore cognitive, social, and emotional aspects of user interaction, data-driven design, and evaluation techniques. Theory is integrated with hands-on labs to provide practical experience in designing, prototyping, and evaluating interactive systems.
COMP 4801	Prototyping in Interaction Design	4	This course immerses students in the theory and practice of prototyping for both digital and physical products. Through a blend of conceptual understanding and hands-on exercises, students will explore prototypes as mindsets, investigate fidelity levels, navigate prototyping processes, and apply best practices across digital and electronic contexts. Emphasis is placed on testing prototypes with real users, integrating feedback, and synthesizing multimodal design workflows. The course culminates in a capstone experience bringing together physical and digital prototyping through a real-world case scenario.
COMP 4802	Database Management Systems	4	This course provides a comprehensive exploration of database management systems (DBMS), emphasizing the principles, design, implementation, and administration of modern database systems. Students will gain an understanding of the core components of a DBMS, including data models, query languages, transaction management, and storage structures. The course also covers advanced topics such as distributed and parallel databases, object-oriented and XML-based databases, as well as emerging applications in data analytics and data warehousing. By the end of the course, students will be equipped with both theoretical knowledge and practical skills to design, implement, and manage robust database solutions for real-world applications.
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 2044	Microeconomic Theory I	3	A concentration on microeconomic theory. Modules contain theory of consumer choice; elements of production and cost. Price and output determination in competitive markets will be discussed in the topics. This course serves as a crucial foundation for further studies in economics and related fields. Students will gain insights into the microeconomic forces that shape the behavior of consumers, firms, and markets.
ECON 2048	Money and Banking	3	The course is designed to provide students with an overview of the field of money and banking and its significance in the economy. It explores the intricate relationship between money, financial markets, and the macroeconomy. Main topics include money, interest rates, the stock market, banking industry, financial markets, financial Regulation and monetary policy in the economy, etc. At the end of the course, students will understand better the role of money and the financial market in our economy.

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 2134	Probability and Statistics for Economists	3	This course introduces the fundamental statistics concepts. Probability and statistical concepts play an important role in the economic analysis and applications. The emphasis is on using statistical methods to make economic decisions. Key topics include descriptive statistics, random variables and probability, point and interval estimation, sampling distributions, hypothesis testing. Students will learn the principles of collecting, organizing, and summarizing economic data.
ECON 2563	Introduction to Statistics and Economics	3	This course introduces students to the statistical approaches required for data analysis in business and economics settings. Students will learn descriptive statistics, probability theory, hypothesis testing, and regression analysis. Students will learn data gathering, organization, analysis, and presentation skills via a combination of lectures and hands-on exercises. The emphasis will be on providing students with the skills required to make informed decisions, solve real-world issues, and critically assess data-driven arguments in business and economic contexts.
ECON 3340	Behavioral Psychology and Economics	3	Combining insights from psychology on human behavior, this course is intended to allow students to become familiar with the behavioral approach to economics and to political decision making. Students will gain in-depth understanding of the major aspects of economic behavior under certainty and uncertainty. Topics include heuristics and biases, prospect theory, bounded rationality, intertemporal choice, deviations from the standard classical models, and social preferences.
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 3516	Central Banking and Monetary Policy	3	This course delves into the intricate world of Money and Banking, exploring the fundamental structures of financial institutions and their pivotal roles in the creation and distribution of money and near-money assets. Students will gain a comprehensive understanding of the Federal Reserve System, examining its inner workings and the techniques employed by central banks in controlling the supply of financial assets to implement effective stabilization policies.
ECON 4115	International Finance	3	ECON 4115 provides students with engaging, balanced coverage of the key concepts andpractical applications of International Finance. Topics covered include balance of payments, exchange rates, economic policies, International Monetary System, financial globalization andInternational financial institutions. Core theoretical principles will be complemented by a seriesof application chapters that confront policy questions using the latest empirical work, data, andpolicy debates.
ECON 4116	Managerial Economics	3	This course examines how economic theory and quantitative tools can be applied to real-world managerial decision making. Emphasis is placed on demand analysis, production and cost relationships, market structures, strategic behavior, pricing decisions, and the management of risk and uncertainty. The course integrates microeconomic theory, business strategy, and statistical reasoning to equip students with practical frameworks for making informed decisions in competitive and uncertain environments.

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 1020	ESL Reading and Writing	3	This course is designed for intermediate to advanced non-native English speakers who wish to strengthen their academic writing and reading skills. Emphasis is placed on developing strategies for reading academic texts critically and producing clear, organized, and well-supported written work. Students will engage in a variety of reading and writing tasks that will enable them to analyze, summarize, synthesize, and respond to texts. By the end of the course, students will be prepared to participate successfully in academic reading and writing tasks across university disciplines.
ENGL 1156	Academic Essay Writing	3	The course is designed to equip students with the essential skills and techniques in academic essay writing. The course emphasis preparation of research papers, essay organization, paragraph writing, rewriting and revising of the essay and proper acknowledgment of sources. By the end of this course, Upon completing this course, students should be able to conduct independent research on a specific topic and construct a persuasive argument using grammatically correct prose.
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 2120	Introduction to Literature	3	This course is focused on building your reading, writing, and research skills through the study of fiction, poetry, and drama. Students will learn to interpret and discuss literary texts, develop arguments, and practice clear, effective composition across analytical and creative forms.
ENGL 3058	Rhetoric and Writing Mastery	3	This course introduces students to the foundations, historical development, and contemporary applications of rhetorical theory. Beginning with the origins of rhetoric in classical antiquity, students will explore how rhetorical traditions evolved through the Middle Ages, the Renaissance, and into the modern era. Particular attention will be given to how rhetorical theory has been shaped by philosophical, political, and cultural contexts, as well as how it continues to inform communication, persuasion, and public discourse today. Through critical readings, comparative analyses, and applied assignments, students will develop a deep understanding of rhetoric as both an art and a field of inquiry.
ERTH 1205	Environmental Science Fundamentals	3	This course offers a comprehensive exploration of Earth's various environmental systems, the environmental challenges it faces, and the root causes behind these issues. Students will embark on a journey to understand the intricate relationships between human activities and the natural world, gaining insights into the complexities of environmental processes and their impact on ecosystems.

FILM 2300	Film History I	3	Film History l introduces students to the rich film history and the evolution and development as a powerful medium of expression. Key theme include the history of American and international filmmaking from 1895 to 1960, the Hollywood's film studio system.The course explores the cultural, technological, and artistic advances that have shaped the film medium. Students will learn about key film history milestones, influential filmmakers, and groundbreaking films that have shaped film art and industry.
GEOG 2420	Geography of Cultural Landscapes	3	This course delves into the intricate relationship between culture and place. It examines the role of culture in shaping and influencing the physical and social landscapes, as well as how geography plays a fundamental role in the formation and expression of diverse cultures. Through a geographic lens, students will explore how cultural practices, traditions, values, and identities are spatially manifested and interact with the surrounding environment. The course will critically analyze the dynamic interplay between culture and place, addressing topics such as cultural landscapes, cultural diffusion, and the impacts of globalization on local cultural expressions.
HIST 2021	Introduction U.S. History to 1876	3	This course presents the political, social, economic, and cultural history of the United States from the beginning of the colonial period to the end of reconstruction in 1876. Exploring topics such as the colonial period, revolution, confederacy and constitution, the Civil War and reconstruction, students will examine the fundamental events and ideas that shaped the nation and its people during this critical period. Students gain a comprehensive understanding of the United States history to 1876.
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.
MARK 2423	Marketing Analytics and Metrics	3	This course integrates economic theory and econometrics to provide students with a comprehensive understanding of marketing strategies and consumer behavior. Emphasizing a multifaceted approach, the course delves into various aspects such as industry structure, historical perspectives, integrated brand promotion, market segmentation, optimal product mix, and effective message placement.
MATH 1526	Introduction to Calculus I	4	Calculus I introduces the fundamental concepts of differential and integral calculus. Students will develop an understanding of functions, limits, derivatives, and integrals, along with practical techniques and applications. This course provides the foundation for further study in mathematics, science, and engineering
MATH 1535	Calculus with Analytic Geometry I	3	An introductory course in calculus and analytic geometry that focuses on the core concepts and applications of single-variable calculus. It develops a strong foundation in differential and integral calculus, with an emphasis on understanding the geometric interpretation of these concepts. Topics include functions, limits, derivatives, L'Hopital's Rule, antiderivatives, and definite integrals. Students will learn to solve a variety of problems using calculus, including optimization, related rates, and modeling real-world phenomena.
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 2250	Elementary Real Analysis	3	This course provides a fundamental exploration of real analysis, emphasizing key concepts such as real numbers, sequences, series, infinite sums, sets, basic topology, continuous functions, differentiation, integration, the theorem of calculus, function sequences and series, power series, and metric spaces. Students will develop a strong foundation in the principles of analysis, enabling them to rigorously understand and apply mathematical concepts in various contexts.
MATH 2455	Introduction to Biostatistics	3	This course introduces probability and statistical analysis with applications in biostatistics, focusing on biological, health, and environmental sciences. Students will explore key probability distributions, hypothesis testing, regression, and using computational tools for data analysis. The purpose of the course is to introduce students to foundational concepts within the field, foster a statistical perspective for interpreting health-related data, and develop essential critical evaluation skills to assess the credibility of research evidence.
MATH 2500	One Variable Calculus II	3	One Variable Calculus provides students with a comprehensive understanding of calculus concepts and techniques that are essential for various STEM disciplines, including engineering, economics, physical and biological sciences, statistics, and data science. The course covers topics such as calculus of elementary transcendental functions, techniques of integration, indeterminate forms, Taylor's formula, and infinite series. Through lectures, problem-solving sessions, and practical exercises, students will develop proficiency in calculus applications and problem-solving strategies. An honors version of the course is available for students seeking additional challenges and advanced learning opportunities.
MATH 2825	Introduction to Complex Analysis	3	This course provides a comprehensive introduction to complex variable theory and its applications to current engineering problems. It deals with complex numbers, analytic functions, integration, Laurent series, residue calculus and conformal mappings. The course also covers one or more applications of the theory are reviewed.
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.
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 3014	Real Analysis II	3	This is an advanced course that builds upon the fundamental concepts introduced in Elementary Real Analysis. This course focuses on the rigorous study of infinite series of constants, sequences and series of functions, uniform convergence and its consequences, power series, and Taylor series. Through theoretical discussions and problem-solving, students will develop a deep understanding of these topics and their applications.

MATH 3100	Applied Linear Algebra	3	Applied Linear Algebra is a course that focuses on the practical applications of linear algebra. The course builds upon the foundational concepts of linear algebra and explores their real-world relevance and problem-solving techniques. Students will learn the knowledge related to the topics of vector spaces, linear equations, eigenvalue problems, orthogonality, least squares, symmetric matrices and quadratic forms, etc. By the end of the course, students are expected to gain the ability to apply linear algebraic methods and tools to analyze and solve problems in real life.
MATH 3371	Numerical Methods Analysis	3	Numerical methods play a crucial role in solving complex mathematical problems that often arise in engineering, science, and various fields. The course provides students with a comprehensive introduction to the fundamental numerical techniques used to approximate and solve mathematical problems. Topics include interpolation and polynomial approximation, numerical differentiation and integration, numerical methods of differential equations, error analysis, the number of conditions for a linear system, linear and nonlinear systems. By the end of the course.students will develop the skills necessary to apply numerical methods effectively. MATLAB software will be uses in this course.
MATH 3420	Modern Abstract Algebra	3	This course delves into the study of groups, rings, and fields, which are fundamental algebraic structures, and investigates their properties, operations, and applications. It offers a deep understanding of algebraic concepts beyond elementary algebra. Students will develop a solid understanding of algebraic systems and their applications in diverse mathematical contexts. Course topics include groups, group homo-morphisms， cyclic groups, cosets, Lagrange's theorem, normal subgroups, introduction to rings, ring homomorphisms and more.
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.
MGMT 4110	Investment and Portfolio Management	3	This course examines the principles, theories, and practices of modern portfolio management. Students will explore asset classes, investment instruments, market operations, and quantitativemodels for risk and return. Emphasis is placed on portfolio construction, performance evaluation, and risk management strategies across both domestic and international markets. The course combines theoretical foundations with empirical evidence and real-world applications.
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.
PHIL 2912	Introduction to Ethics	3	A critical exploration of the foundations of morality and moral knowledge, this course examines various philosophical perspectives on ethical theory. Students will engage with key normative ethical frameworks such as hedonism, consequentialism, deontological ethics, virtue ethics, and feminist ethics, while also addressing metaethical questions about the nature of morality. The course delves into the challenges posed by ethical pluralism and moral relativism, offering a comprehensive overview of moral philosophy's role in guiding human behavior. Through thoughtful analysis and discussion, students will assess the philosophical arguments behind these ethical theories and explore their real-world applications.

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 2301	Circuit Theory and Electronics	4	Analysis of circuit variables and elements, including resistive networks, operational amplifiers, and transient responses of RL, RC, and RLC circuits. Investigation of linear and nonlinear circuit behavior, element I-V characteristics, AC power computations, and balanced three-phase systems. Application of Laplace and Fourier transforms in circuit analysis to facilitate frequency-domain interpretations. A laboratory component integrates theoretical principles with practical circuit design and experimentation.
PSYC 1040	Foundations of Psychology	3	This course provides an overview of the foundational concepts, theories, and methods in psychology. Topics covered include the history of psychology, research methods, biological bases of behavior, nervous system, sensation and perception, language, and thought, learning, memory, motivation, emotion, personality, psychological disorders, and therapy.
PSYC 2021	Physiological Psychology	3	This course explores the physiological foundations of behavior, focusing on the structure and function of the nervous system and how it controls behavior. Topics include the basic anatomy of the nervous system, the cellular mechanisms underlying neurotransmission, sensory processes, and cognitive neural functions. We will also examine the biological bases of major psychiatric disorders, with an emphasis on their physiological underpinnings.
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.
STAT 1100	Introduction to Statistics	3	This course is an introduction to statistics, focusing on fundamental concepts and techniques foranalyzing and interpreting data. Topics covered include descriptive statistics, probability, probability distributions, statistical inferences, and various statistical analyses. Emphasis will be placed on applying statistical concepts to real-world problems and developing critical thinking skills.
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 4011	Applied Statistical Models	3	This course introduces students to the theory and application of statistical and computationalmodels for analyzing data and making informed decisions in business and finance. Students willlearn how to summarize and visualize data, quantify uncertainty, perform statistical inference, and build predictive models for both continuous and categorical outcomes. Advanced topicsinclude time series forecasting, Monte Carlo simulation, and optimization models for decisionmaking.