International Credit Program at Elmira College
Summer 2026 Course Listing as of 4/2/2026

Course Code	Course Title	Credits	Course Description
ACCT 1060	Principles of Financial Accounting	3	This course introduces fundamental principles and concepts of financial accounting, providing students with a comprehensive understanding of the financial reporting process. Topics covered include the accounting cycle, preparation of financial statements, and analysis of financial information. Students will develop the skills necessary to analyze, interpret, and communicate financial information to support decision-making.
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 combinations. 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 3110	Visual Anthropology	3	This course introduces students to Visual Anthropology, a field that studies visual culture and uses visual media such as photography, film, and video as tools for ethnographic research. Students explore how images represent cultures and how visual media can be used to understand social and cultural life. The course examines the historical development of visual anthropology, key debates about representation and ethics, and the role of ethnographic film and photography. It also explores contemporary developments such as Indigenous media and collaborative visual storytelling. Through discussions, film analysis, and field activities, students will learn to analyze visual materials and create their own visual ethnography projects.
ANTH 3681	Environmental Anthropology	3	This course delves into human-environment relationships through environmental anthropology, exploring historical, cultural, and social dimensions. Students analyze indigenous ecological knowledge, resource management practices, and perceptions of nature, addressing contemporary challenges like climate change and biodiversity loss. The course emphasizes interdisciplinary perspectives and fosters critical thinking for navigating complex environmental issues.
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 1160	History of Jazz	3	This course provides a general survey of the history of jazz from its beginnings to the present. Students will explore the historical, theoretical, and critical dimensions of jazz, coupled with hands-on experience in the creative process. The curriculum emphasizes a study of the stylistic and historical components of jazz, including an analysis of influential jazz composers and performers. The course places these elements within the broader context of cultural and artistic movements in the world.
ARTH 2108	Art of the Italian Renaissance	4	This course examines the development of artistic production in Italy from the early fifteenth century through the late sixteenth century. It surveys the visual arts within the social, political, and cultural contexts of Renaissance Italy, beginning with the rise of civic humanism in the communes and extending to the sophisticated artistic cultures of princely courts. Emphasis is placed on painting, sculpture, architecture, and urban visual culture, as well as the roles of patronage, humanist learning, workshop practice, and artistic theory. Through the study of major artists, regional artistic centers, and key monuments, the course analyzes how Renaissance art transformed visual representation and established enduring artistic ideals. The course also considers the relationship between art, power, religion, and commerce during the period from approximately 1400 to 1600.

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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 2550	Introduction to Music Analysis	3	This course introduces students to the foundational tools, concepts, and methodologies used in the analysis of Western music from the Medieval period to the present. Students will learn modern and historical notation, examine rhythm, melody, harmony, counterpoint, texture, and form, and apply analytical techniques to a wide range of repertoire. The course culminates in integrative analyses that combine multiple theoretical perspectives.
ARTH 3261	Asian Art and Architecture	3	This course provides a comprehensive exploration of the art and architecture of Asia, tracing its development from ancient civilizations to the modern era. Students will study both monumental structures and portable art objects, with a focus on a wide array of media such as painting, ceramics, textiles, and photography. In addition to architectural landmarks, the course emphasizes how different artistic traditions within Asia have interacted with one another and with global influences. By examining the diversity and evolution of these forms, students will gain a deeper understanding of the dynamic and interconnected cultural exchanges that shape Asian art, challenging traditional notions of what constitutes "Asian art".
ARTH 3701	Music History	3	This course explores the rich tapestry of European music from the Middle Ages to the present. Delve into the evolution of musical styles, key composers, and the cultural contexts that shaped the sounds of this era. This course offers a fascinating journey through the evolution of musical styles, composers, and cultural influences that have shaped Western music over several centuries.
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.
BIOL 1245	Exploration to General Biology II	4	This course is the second part of a comprehensive introduction to biological sciences, focusing on the diversity of life, ecology, and physiology. It explores the fundamental principles governing organisms, their interactions with the environment, and their evolutionary history. The course examines the structure and function of plants and animals, ecological dynamics, and the impact of human activities on biodiversity and ecosystems. Students will develop analytical and critical thinking skills through lectures, discussions, and laboratory activities, preparing them for advanced studies in biological sciences.
BIOL 1410	Organismal Biology	4	BIOL 1410 is an introductory course in organismal biology that explores the diversity of life on Earth, focusing on the structure, function, ecology, and evolution of organisms. How organisms live, survive, and interact within their environments. Through a scientific lens, this course examines the fundamental principles of ecology, genetic variation, inheritance, and evolution, elucidating the processes that have shaped the diversity of life on Earth. With a focus on hands-on learning experiences, students will engage in laboratory sessions to reinforce theoretical concepts and develop practical skills in scientific inquiry. (Laboratory)

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BIOL 2090	Ecology	4	This course introduces students to the fundamental principles of ecology, including ecological processes, population and community dynamics, energy and nutrient relations, population distribution and abundance, ecological goods and services, nutrient cycling and retention, and more. Students will gain an understanding of the intricate relationships that exist in ecosystems and the importance of conservation and management practices in maintaining ecosystem health.
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 is designed to provide a comprehensive understanding of the principles of development and comparative physiology. It is designed to offer students a deep dive into the complex processes that govern the growth and development of organisms, as well as the physiological mechanisms that sustain life.
BIOL 3302	Molecular Genetics and Evolution	4	This course is designed to provide students with an exploration of the chromosomal and molecular basis of gene transmission and function. It covers strategies for constructing genetic and physical maps of genes and genomes, as well as methods for isolating specific genes. The course also examines regulatory mechanisms for gene expression in both prokaryotic and eukaryotic organisms through various examples. Additionally, it introduces key concepts in genetic analysis, including principles of heredity, mutation, and recombination. Students will gain hands-on experience through laboratory exercises, reinforcing their understanding of theoretical concepts. By integrating lectures, discussions, and practical applications, the course aims to equip students with a comprehensive understanding of molecular genetics. Students are expected to have a foundational background in biology to fully engage with and apply the concepts discussed in the course.
BIOL 3321	Cancer Biology	3	Cancer is a diverse set of diseases driven by genetic and environmental factors, affecting nearly every tissue in the body. This course explores the molecular and cellular basis of cancer, including oncogenes, tumor suppressor genes, signaling pathways, and tumor progression. We will examine experimental models, diagnostic methods, and treatment strategies such as chemotherapy, targeted therapies, and immunotherapies. Clinical aspects, including pathology and ethics in cancer research, will also be discussed.
BIOL 3580	Evolution and Society	3	This course explores how evolutionary processes shape biological, social, cultural, and technological systems. Students will examine human evolution, cooperation and conflict, health and disease, cultural transmission, climate change, and the future of humanity through an evolutionary lens. The course also addresses the societal implications of evolutionary theory, including debates surrounding religion, media representation, race, and technology. By connecting evolutionary science to real-world issues, students gain a deeper understanding of how evolution continues to influence modern life.
BIOL 3600	Introduction to Genomics	3	This course provides a comprehensive introduction to genomics, covering genome structure, function, evolution, and applications in science, medicine, and society. Students will explore major genomic technologies, analyze real genomic datasets using bioinformatics tools, and discuss the scientific and ethical implications of genomics in modern research and healthcare.
BIOL 3889	Molecular Cell Biology	4	This course explores the structure and function of cells as the basic units of life and examines how macromolecules contribute to cellular processes. Topics include cell organization, metabolism, gene expression, membrane dynamics, energy production, cell signaling, and genetic regulation. The course emphasizes key biological principles that apply across all forms of life, providing a foundational understanding of cellular and molecular biology.

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BIOL 4312	Principles of Mammalian Physiology	3	This course introduces the fundamental principles of mammalian physiology with emphasis on the structure, function, and regulatory mechanisms of major organ systems. Topics include cellular transport processes, neuronal signaling, muscle activity, cardiovascular circulation, respiratory gas exchange, digestive function, renal regulation, endocrine control, metabolism, and reproduction. The course explores how these systems interact to maintain physiological balance within the body. Attention is given to the physical and chemical processes underlying biological function, helping students understand how coordinated organ systems support normal bodily activity. Demonstrations and practical exercises reinforce key physiological concepts and system integration.
BIOL 4520	Molecular Biotechnology	4	Molecular Biotechnology explores the principles and techniques used to manipulate genetic material for scientific, medical, agricultural, and industrial applications. The course examines the molecular basis of gene structure and function, recombinant DNA technology, genome analysis, gene expression systems, and emerging biotechnological innovations.
BUSI 2400	Entrepreneurship and Innovation	3	This course introduces the foundations of innovation and entrepreneurship, integrating economic and strategic perspectives to explore how new ideas are generated, developed, and transformed into successful ventures. Students will learn the theory and practice of entrepreneurship, with emphasis on the role of innovation, creativity, industrial organization, intellectual property, and networks in shaping competitive advantage. Through lectures, case studies, and applied projects, students will develop the knowledge and skills to evaluate entrepreneurial opportunities, design innovative business models, and understand the broader economic and social contexts of entrepreneurship.
BUSI 2621	Business and Commercial 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 the 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.
BUSI 3024	Professional Networking and Career Readiness	3	This course develops competencies in professional networking and career readiness, emphasizing strategic relationship-building, labor market navigation, and full-time employment preparation. Students engage with frameworks for cultivating social capital, managing professional identity, and executing effective career search strategies. Through applied exercises, learners refine communication techniques, networking behaviors across digital and in-person contexts, and job acquisition skills, including resume development, interviewing, and offer negotiation. The course integrates contemporary practices aligned with global workforce expectations, preparing students to transition effectively into professional environments and sustain long-term career growth.
BUSI 3030	Business Communication	3	This course provides an in-depth exploration of business communication principles, focusing on the creation of effective business documents and oral presentations. Students will develop skills in clear and concise communication tailored to professional audiences. The course includes the study and application of team communication, effective listening, intercultural communication, and the use of technology to facilitate the communication process. Emphasis is placed on collaborative projects, using digital tools, and presenting information in various business formats to meet organizational goals.
BUSI 3310	Data Visualization	3	This course introduces the principles and practices of data visualization and data storytelling. Students will learn how to clean, analyze, and visualize datasets using Tableau in order to transform raw data into meaningful insights. The course emphasizes selecting appropriate visualization techniques, applying best practices in visual design, and communicating findings effectively. Through hands-on exercises and projects, students will develop skills in creating charts, interactive dashboards, and visual data stories to support data-driven decision making
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.

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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 2310	Organic Chemistry I	4	Organic Chemistry I serves as an introduction to the foundational principles of organic chemistry. The course focuses on the structures, properties, and chemical reactivity of carbon atoms in different hybridization states, particularly in alkanes (including cycloalkanes), alkenes, and alkynes. Additionally, various aspects of isomerism in organic compounds and reaction mechanisms (substitution, elimination, and addition) will be covered with an emphasis on electron flow.
CHEM 3042	Biochemistry I	4	Biochemistry I explores the molecular foundations of life by examining the chemical processes that occur within living organisms. This course focuses on the structure, properties, and interactions of biological molecules and the physical principles governing biochemical systems. Emphasis is placed on proteins, enzymes, carbohydrates, lipids, nucleic acids, and the thermodynamic and kinetic principles that control biochemical reactions. Students will also study how macromolecular structure determines biological function and how biochemical pathways are organized and regulated in cells. Through conceptual discussions and problem-solving, the course develops the analytical skills required to understand metabolism, molecular recognition, and the chemical logic of living systems.
CHEM 3043	Biochemistry II	4	Biochemistry II examines the dynamic chemical processes that sustain life, with emphasis on metabolic pathways, energy transformation, and the molecular flow of genetic information. The course explores how cells generate, store, and utilize energy through interconnected metabolic networks and how these pathways are regulated to maintain cellular homeostasis. In addition, the course investigates the molecular mechanisms of DNA replication, transcription, and translation, along with regulatory systems that control gene expression. Integrating metabolic and genetic perspectives, the course highlights how biochemical pathways respond to physiological demands and environmental changes.
CHEM 3500	Fundamentals of Thermodynamics	4	Thermodynamics is one of the most basic of physical sciences and almost defines the field of Mechanical Engineering. Topics include properties of a simple pure compressible substance, equations of state, the first law of thermodynamics, the second law of thermodynamics, internal energy, specific heats, entropy, and the application of the first law to a system or a control volume. Additionally, the course covers free energies, enthalpy, chemical potential, and the relationships between these quantities in various thermodynamic processes, including phase transformations and equilibrium states. After the completion of this course, students will be able to understand basic concepts, laws of thermodynamics and heat transfer and their applications.
COMM 1030	Research Methods in Communication	3	Research methods in communication is a fundamental course that covers the basic theories and practices of conducting research in the field of communication. Students will learn about different research designs and data collection methods commonly used in communication studies, such as surveys, experiments, content analysis, and interviews. In addition, this course will introduce the foundational concepts and essential stages of conducting research projects in communication studies. Students will learn the key principles of defining research subjects, developing hypotheses, and choosing appropriate methodologies for their research projects. Upon completion of the course, students will have a solid understanding of the research process in communication studies, and will be able to apply their knowledge and skills to a variety of research projects.
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 cover: 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 make rhetorical choices and use various delivery techniques to engage and persuade their listeners.

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COMM 2200	Theory of Communication	3	This course is designed to explore the fundamental principles and theoretical frameworks of communication across various contexts. It aims to equip students with the knowledge and skills necessary to navigate diverse communication situations in both personal and professional settings. Students will examine key communication models, the role of verbal and nonverbal communication, the dynamics of interpersonal and group interactions, and the influence of media, culture, and technology on communication processes. Special emphasis will be placed on how communication theories apply to organizational settings, public discourse, and cross-cultural interactions. Through critical analysis and practical applications, students will develop a deeper understanding of how communication shapes human interactions and societal structures, enabling them to analyze and enhance their communication styles for more effective collaboration in different social and work environments.
COMM 2700	Argumentation and Debate	4	This course introduces students to the theory and practice of argumentation and debate as tools for critical thinking, public reasoning, and informed decision-making. Students learn how arguments are constructed, analyzed, challenged, and defended across academic, civic, and professional contexts. Classroom debates, structured exercises, and analytical writing help students strengthen their reasoning, communication, and evaluative skills.
COMM 3051	Fundamental Media Writing	3	Fundamental Media Writing is a labor-intensive, practice-oriented course that introduces students to the core principles and skills of professional media writing across platforms. Emphasizing clarity, accuracy, audience awareness, and ethical responsibility, the course trains students to write effective content for newspapers, broadcast media, public relations, and digital journalism. Students learn how to gather information, evaluate sources, structure news stories, and adapt writing styles to different media formats while meeting professional standards and deadlines. Through frequent writing assignments and revisions, students develop foundational competencies essential for further study and work in journalism, media, and communication fields.
COMM 3223	Formal Language And Automata Theory	3	This course provides a rigorous introduction to the mathematical foundations of computation, focusing on formal languages and abstract models of computing machines. It systematically develops the theory of regular and context-free languages, as well as computability and decidability through recursive and recursively enumerable languages. Core machine models—including finite automata, pushdown automata, and Turing machines—are analyzed in terms of their expressive power and computational limitations. Emphasis is placed on formal definitions, proof techniques, and the relationships between language classes and computational models.
COMM 3266	Public Relations	3	The 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.
COMP 1005	History of Computing	3	Tracing the evolution of computing from ancient calculation tools to the digital age, this course explores the key technological, scientific, and social developments that shaped modern computing. Emphasis is placed on pivotal innovations, significant individuals and institutions, and the societal transformations driven by computing technologies. Students will investigate how computation has evolved across disciplines, industries, and cultures, and how these developments have impacted education, communication, labor, politics, and global connectivity.
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

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COMP 1391	Data Literacy	4	This course teaches core concepts and practical skills for data literacy and effective data visualization. Students learn to interpret, evaluate, analyze, and communicate data-driven information in academic, professional, and public settings. It integrates conceptual statistical reasoning with hands-on computational practice using R. The course focuses on data reasoning, identifying misleading statistical claims, and creating clear quantitative visualizations. It covers probability, sampling, statistical inference, and common analytical pitfalls, while building practical R workflows for data cleaning, transformation, and visualization. Instead of formula memorization, the course emphasizes applied data reasoning and critical interpretation. Through weekly exercises and visualization projects, students turn raw data into meaningful insights and communicate results via graphs, tables, and narratives. By completing the course, students gain foundational data analysis skills and the ability to assess data-driven arguments in society.
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 1700	Digital Design	3	This course will delve into a wide range of topics that will equip students with the skills and knowledge necessary to excel in the field of digital design. In this course, advanced concepts such as interactive design, motion graphics, and responsive web design will be introduced. And this course contains several innovative techniques, such as design thinking, storytelling, gamification, VR/AR. In this course, students will gain a comprehensive understanding and practical skills in digital design, preparing them for the evolving design landscape.
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 structures.
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 2290	Introduction to Scientific Programming with Python	4	This course introduces students to computational thinking and scientific programming using Python. Students will learn how to implement mathematical formulas, manipulate data structures, use libraries such as NumPy and SciPy, and visualize scientific data. The course emphasizes programming as a tool for solving problems in the natural and social sciences, focusing on simulation, modeling, and data analysis. By the end, students will be able to design, implement, and test scientific programs in Python, with a brief introduction to R for statistical computing.
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.

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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 3135	Algorithm Design and Analysis I	3	The core aim of this course is to provide a comprehensive understanding of algorithms as precise mathematical constructs. Students will delve into the fundamental principles of algorithm design, focusing on techniques for creating efficient and correct algorithms while addressing memory requirements. The course covers a range of topics, including Analysis of Algorithms, Algorithm Design Techniques, Computational Complexity.
COMP 3208	Information Security	4	This course provides a comprehensive introduction to the principles, models, and technologies underpinning Information Security. It develops a systematic understanding of security threats, vulnerabilities, and countermeasures across computing systems, networks, and applications. Core topics include cryptographic foundations, authentication mechanisms, access control models, system and network security architectures, software vulnerabilities, and data protection strategies. The course also examines emerging security challenges, including cloud security, privacy preservation, and ethical and policy considerations. Emphasis is placed on integrating theoretical principles with practical security design and analysis.
COMP 3210	Information Visualization	3	This course introduces the principles and techniques used to visualize complex data and information. Students learn how to represent abstract data visually using effective graphical encodings and layouts. The course explores the relationship between data, visual representation, and human perception to support exploration, analysis, and communication of information. Topics include data and task abstraction, visual encoding using marks and channels, spatial arrangement techniques, interactive visualization, and evaluation of visualization systems. Through lectures and laboratories, students will develop the skills needed to design and critique information visualizations.
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 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.

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COMP 4100	Programming Language Fundamentals	3	This course offers an overview of general features of programming languages and explanation of basic methods of language implementation. Design and programming of particular parts of compilers are supported by elements of the theory of grammars and automata. Students will learn programming language syntax, parsing, semantics, and type systems, and apply these concepts using languages like Scheme, ML, or Haskell. The course covers control flow, data abstraction, polymorphism, concurrency, and optimization techniques to prepare students for building efficient, maintainable software. By the end of the course, students will be able to design and implement advanced programs while understanding the underlying principles that guide programming language design and execution.
COMP 4224	Applied Analytics and AI Programming for Business	3	This course develops technical and analytical competencies for applying data analytics, machine learning, and artificial intelligence within business contexts using Python. It integrates programming for data extraction, transformation, and management with statistical modeling, predictive analytics, and AI-driven decision-making. Students will learn to prepare and structure data for machine learning workflows, implement and interpret analytical models, and communicate insights through programmatic visualization. Emphasis is placed on practical business applications, ethical data practices, and mindful data management strategies informed by contemporary analytics frameworks and case-based reasoning.
COMP 4255	Pattern Recognition and Machine Learning	4	This course delves into the fundamental principles of pattern recognition and machine learning, offering a comprehensive exploration of both theoretical concepts and practical applications. Students will delve into supervised and unsupervised learning techniques, gaining insights into regression, classification, and clustering algorithms. Through rigorous mathematical analysis and hands-on implementation, students will develop a solid understanding of algorithmic mechanisms and their implications in real-world scenarios. Additionally, the course covers advanced topics including ensemble methods, deep learning architectures, and Bayesian inference, empowering students to tackle complex data analysis tasks with confidence. Combining theoretical knowledge with practical skills through projects and assignments, students will be adept at using machine learning techniques to extract meaningful patterns and insights from diverse data sets, with a focus on application in R.
COMP 4315	Applied Data Analysis	4	This course examines the application of data analysis to complex problem-solving, with an emphasis on advanced methods for data transformation, modeling, and interpretation. Adopting a coding-supported and tool-oriented approach, the course introduces techniques for pattern discovery, predictive modeling, and relational analysis within complex datasets. Through guided projects and independent work, students develop rigorous analytical reasoning and gain experience in evaluating models, interpreting results, and drawing defensible conclusions from structured and unstructured data across diverse domains.
COMP 4510	Computer Vision	3	This course provides a comprehensive introduction to the fundamental concepts and techniques in computer vision. It focuses on the development of algorithms and applications that allow computers to interpret and analyze visual information from the world. Key topics covered include image formation, segmentation, feature extraction, matching, depth estimation, object recognition, and dynamic scene analysis. Emphasis is placed on both theoretical foundations and practical implementation, with a mix of lectures, assignments, and hands-on computer projects. By the end of the course, students will understand how to design and implement computer vision systems capable of solving problems in various fields, including autonomous navigation, industrial inspection, medical image analysis, and more.
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.

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COMP 4900	AI, Data, and Society	4	This course examines the complex relationships between artificial intelligence (AI), data science, and society. It explores how computational technologies shape social, economic, and political systems, and how ethical frameworks and public policies can guide their responsible development and use. Through the study of ethical frameworks, practical tools, and real-world case studies, students will develop the ability to identify, analyze, and respond to issues such as bias, privacy, accountability, and the societal impacts of AI.
COMP 4920	Artificial Intelligence for Business	3	This course explores how artificial intelligence (AI) is transforming business. Students will learn the basics of AI, machine learning, deep learning, and generative AI, and see how these technologies are applied in finance, marketing, operations, and human resources. The course also covers ethical considerations, data governance, and building business cases for AI adoption. Students will gain practical skills to evaluate, implement, and manage AI solutions responsibly in a business context.
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 include 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 II	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 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 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 2114	Intermediate Microeconomics II	3	Intermediate Microeconomics II is a continuation of Intermediate Microeconomics I, delving deeper into advanced topics in microeconomic theory. The course primarily focuses on some key areas: general equilibrium and welfare, imperfect markets, and market failure. To fully understand imperfect markets and information, students will also be introduced to strategic interactions and game theory. The emphasis throughout the course is on developing a strong conceptual understanding while utilizing real-world examples and applications.
ECON 2134	Probability and Statistics for Economists	3	This course introduces the fundamental statistics concepts. Probability and statistical concepts play an important role in 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.

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ECON 2135	Econometrics I	3	This course introduces students to the fundamental concepts, principles, and methodologies used in econometric analysis. Key topics will be covered, including simple regression model, regression analysis, omitted variable bias, ordinary least squares, heteroskedasticity, dummy variables, panel data methods, instrumental variables estimation, hypothesis testing in the linear regression model, etc. By the end of the course, students will have gained practical skills in econometric analysis and be equipped to conduct empirical research in economics.
ECON 3040	Intermediate Macroeconomics I	3	Intermediate Macroeconomics I delves into the core concepts and models essential for understanding the functioning of modern economies. The course covers the short-run, medium-run, and long-run behavior of aggregate economies, focusing on output, unemployment, inflation, and growth. It introduces students to analytical tools and macroeconomic frameworks to evaluate economic performance, policy decisions, and global economic interconnections. Real-world applications are emphasized to foster a comprehensive understanding of macroeconomic theories and their implications.
ECON 3041	Intermediate Macroeconomics II	3	Intermediate Macroeconomics II deepens the analysis of national income determination, business cycle dynamics, and the roles of monetary and fiscal policies. The course emphasizes both closed and open economy frameworks and explores key issues such as capital accumulation, government debt, exchange rate regimes, and policy trade-offs. Through model-based reasoning, students will examine long-term economic growth and short-run fluctuations, with attention to real-world data and policy debates. The course integrates theoretical frameworks with historical and contemporary policy discussions relevant to global macroeconomic stability.
ECON 3114	International Macroeconomics	4	International Macroeconomics examines how national economies interact through trade, capital flows, and exchange rate systems in an increasingly interconnected global economy. This course explores the determination of key macroeconomic variables—including output, inflation, interest rates, exchange rates, and the trade balance—from an international perspective. Emphasis is placed on how global financial markets, monetary and fiscal policies, and international institutions influence macroeconomic performance across countries. Students analyze exchange rate determination, balance of payments adjustments, financial globalization, and currency crises while also examining the policy choices governments face under different exchange rate regimes. Through theoretical models and empirical examples, the course develops an understanding of how international macroeconomic forces shape the global business environment and economic stability.
ECON 3120	Industrial Organization	3	This course provides an introductory exploration of strategic behaviors exhibited by firms operating within imperfectly competitive markets. Topics covered encompass various aspects such as market concentration, mergers, entry deterrence, product differentiation, advertising, and regulation. Additionally, the course delves into the theory of industrial organization, emphasizing the analysis of strategic interactions among market participants in scenarios with limited competition. Drawing upon principles from Microeconomics and Game Theory, students will examine the behavior of profit-maximizing firms, exploring market structures and competitive strategies. The curriculum includes a comprehensive review of firm theory, analysis of monopolistic conduct, and game theoretic methods to study oligopolistic behavior across different competitive environments. Real-world applications are integrated throughout the course, providing insights into industry performance and regulatory considerations.
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.

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ECON 3560	Economic Growth and Development	3	This course introduces the dynamics of economic growth, exploring its nature, causes, and implications. Through an applied approach, students will examine key factors such as capital accumulation, technological innovation, human capital development, globalization, government policies, geographical influences, and the utilization of natural resources. By analyzing case studies and empirical evidence, students will gain a comprehensive understanding of the complexities involved in fostering sustainable economic growth.
ECON 3650	Financial Markets and Institutions	3	Financial Markets and Institutions provide the foundational knowledge necessary for understanding the structure, functions, and operations of financial systems. This course explores various financial instruments, institutions, and regulatory frameworks that govern modern financial markets. Through a blend of theoretical concepts and practical applications, students will develop a comprehensive understanding of how financial markets operate and their crucial role in the economy.
ECON 4026	Topics in International Trade	3	This course is designed to equip students with the conceptual understanding of causes and consequences of international trade, to enhance their empirical skills for contemporary international economic research and policy analysis. In the course, students will learn various topics, such as comparative advantage, specific-factors model, Heckscher-Ohlin model, effects of trade on factor prices and factor movements, economic growth and welfare, trade policy, barriers to trade, etc. By the end of the course, students will develop analytical skills to assess the impacts of trade on economies, industries, and individuals, and gain insights into the challenges and opportunities presented by the global trading system.
ECON 4101	Applied Game Theory	3	Game theory is a mathematical framework that explores the strategic interactions between rational decision-makers and is widely used in economics, political science, biology, computer science, and many other fields. This course bridges the gap between theory and real-world decision-making by examining the strategic aspects of situations where multiple parties make choices that impact each other. In this course, students will learn how to model and analyze strategic interactions, including competitive, cooperative, and mixed strategies.
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 1130	Introduction to Native American Literature	3	This course analyzes Native American history, written works, and oral traditions. Students will read chronicles and commentaries on published texts, narratives, oratorical, and prophetic tribal epics. Students will become deeply familiar with the rich tradition and wide variety of literature by Native American peoples—learning a bit about indigenous cultures, histories, identities, thought, issues, concerns, and strategies over time, and in an ever-changing world.
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 emphasizes 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 1326	Literature and Film	3	This course examines the dynamic relationship between literary texts and their cinematic counterparts, emphasizing how narrative, form, and meaning shift across media. Students will engage in close reading of novels, short stories, and poems alongside critical viewing of films, analyzing adaptation as both interpretation and creative transformation. The course explores narrative structure, visual language, authorship, and cultural context through representative works such as Pride and Prejudice and its film adaptations, The Great Gatsby, and Blade Runner (adapted from Do Androids Dream of Electric Sheep?). Attention is given to how meaning is reshaped through cinematic techniques such as mise-en-scène, editing, sound, and performance, as well as how literary devices are translated or reimagined on screen.

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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 2214	Shakespeare	3	Satisfying a key core curriculum requirement, this course provides a thorough exploration of Shakespeare's representative comedies, tragedies, histories, and romances. Structured around a dual focus, it invites students to conduct close analyses of Shakespeare's linguistic craft and theatrical craftsmanship while also examining how his works grapple with timeless and fiercely debated themes—including individual agency and political governance, gender and sexuality, as well as identity and race—within both early modern English society and today's global context. These interconnected inquiries underscore Shakespeare's enduring significance in British and global literary and cultural traditions. Over the semester, students will engage in intensive close reading of a carefully selected set of plays, among them widely taught works such as A Midsummer Night's Dream, Twelfth Night, Henry IV, Part 1, Hamlet, Macbeth, King Lear, Othello, and The Tempest. The course is organized into two primary units: the first investigates non-tragic genres, encompassing comedies, histories, and romances, while the second centers on the canonical tragedies. Concurrently, these dramatic texts act as a critical lens through which to explore wider historical and cultural contexts, such as early modern print culture, theatrical conventions of the era, and the shifting circumstances that influence how Shakespeare's works are staged, distributed, and interpreted. Adopting a student-centered pedagogy, the course encourages active participation in class discussion, textual analysis, and critical interpretation, fostering collaborative learning to deepen comprehension of Shakespearean drama.
ENGL 2400	Introduction to Popular Culture	3	This course introduces students to key methods and theories for analyzing contemporary popular culture. Through film, television, literature, memes, advertising, music, video games, street art, and digital media, students learn how everyday cultural forms shape social identities, values, and power dynamics. The course emphasizes critical thinking, media literacy, and clear, persuasive academic writing about culture.
ENGL 2620	Twentieth-Century American Literature	3	This course surveys major developments in American literature from the early 1900s to the end of the twentieth century. Students will explore key literary movements—including Modernism, the Harlem Renaissance, Postmodernism, and contemporary multicultural writing — through novels, poetry, drama, and essays. The course emphasizes the relationship between literature and historical, cultural, and social contexts such as war, industrialization, race, gender, and identity. Through close reading and critical analysis, students will develop an understanding of how American writers responded to and shaped the rapidly changing twentieth century.
ENGL 2650	Digital Writing and Social Media	3	This advanced writing course examines how digital rhetoric shapes public discourse, identity, performance, and social activism in contemporary media. Drawing on case studies of hashtag movements, algorithmic surveillance, and online self-presentation, students will analyze how digital platforms transform communication. Through research-informed projects, participants will create multimodal content that engages with issues of knowledge equity, community formation, and digital authority. The course emphasizes both critical analysis of digital genres and the development of ethical, effective communication strategies for diverse online audiences.
ENGL 3050	Advanced Writing Workshop	3	This course provides advanced instruction and practice in writing processes, rhetorical strategies, and stylistic techniques. Students will explore how writing functions in academic, professional, and public contexts and examine how writers adapt texts to specific audiences, purposes, and rhetorical situations. Through intensive reading, writing, peer review, and revision, students will strengthen their analytical, rhetorical, and stylistic skills. The course also emphasizes collaboration, research-based writing, and reflection on literacy development, while offering opportunities to practice multiple non-fiction genres, including narrative, analysis, explanation, critique, and argument.

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ENGL 3300	Global Perspectives in Literature	3	This course examines contemporary global literature through the lenses of identity, translation, migration, and border-crossing. Working with novels, memoirs, poetry, and theoretical essays, students analyze how writers navigate cultural, linguistic, political, and personal borders. Through weekly pairings of literary texts and theoretical readings, students explore how narratives shape understandings of identity and belonging in a global world.
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 2100	Introduction to Film Studies	3	This course provides an introduction to the study of film, focusing on the fundamental techniques, vocabulary, and methods of film analysis. Students will explore the aesthetics, forms, styles, and techniques of cinema, learning how to critically engage with film as both an art form and a cultural text. Key areas of study include narrative structure, mise-en-scène, cinematography, editing, sound, and genre theory, along with an examination of influential filmmakers and film movements. Through screenings, discussions, and written assignments, students will develop analytical skills and a deeper understanding of how films convey meaning.
FILM 2300	Film History I	3	Film History l introduces students to the rich film history and the evolution and development of this powerful medium of expression. Key themes include the history of American and international filmmaking from 1895 to 1960, the Hollywood 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.
FILM 2650	Literature and Film	3	This course explores major works of German-language literature and film from the 20th and 21st centuries, focusing on the relationship between textual and visual storytelling. Through close reading and film analysis, students examine how literary and cinematic works reflect and shape cultural, historical, and social developments in German-speaking contexts. Particular attention is given to intertextuality, adaptation, and the interplay between narrative forms across media. Students engage critically with primary texts and films as well as relevant academic scholarship in both German and English.
FILM 3460	Nazis in Film	4	This course explores changing representations of Nazis in German film, from the propaganda of the "Third Reich" to postwar cinematic reckonings with guilt, memory, and moral responsibility. It examines how German filmmakers across decades have depicted the longing for strong leadership, pleasure at inflicting pain on enemies, and fear of racial and cultural others. Through close readings of key films, historical contexts, and evolving aesthetic strategies, students will analyze how cinema both shaped and reflected Germany's confrontation with its Nazi past. The course considers film as a site of national self-examination and ideological struggle, tracing the transformation from glorification to condemnation and, more recently, to ironic or revisionist portrayals.
FINC 2132	Financial Management Fundamentals	3	This course serves as an introduction to the fundamental principles of corporate financial management, providing students with a comprehensive understanding of key concepts that form the basis of financial decision-making within organizations. Participants will explore critical topics such as the time value of money, interest rates, principles of valuation, net present value (NPV), risk and return, and cost of capital.
FINC 3702	Advanced Corporate Finance	3	This course provides an in-depth examination of the theoretical and practical aspects of corporate finance. Building on fundamental financial concepts, it explores advanced topics in capital structure, financing decisions, and corporate governance, focusing on real-world applications. Students will analyze financial strategies through case studies, financial modeling, and current research to understand how corporations manage risk, value assets, and maximize shareholder wealth in an ever-changing market environment.
GEOG 1250	World Regional Geography	4	This course examines the major world regions through a geographic lens, emphasizing spatial patterns, cultural landscapes, political organization, economic development, environmental challenges, and globalization. Students will explore how physical geography, historical processes, and cultural systems shape regional identities and global interconnections.

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GEOG 2070	Remote Sensing	4	This course comprehensively introduces the principles, physics, sensor technology, processing, and applications of remote sensing across the electromagnetic spectrum, with a focus on Earth systems, including the atmosphere, land, and oceans. It covers the basic scientific principles of remote sensing, the physics of electromagnetic radiation, and the complex interactions between radiation and the Earth's surface and atmosphere. Laboratory sessions require students to apply theoretical concepts to data collection and interpretation using software such as Geomatica© and SNAP.
GEOG 2092	Quantitative Methods in Earth and Environment	4	This course teaches quantitative methods fundamental to analyzing natural and social science data in Earth and environmental studies. It covers how environmental phenomena are studied via data collection, organization, visualization, and statistical modeling, with a focus on how ecology, geography, geology, environmental economics, sociology, and remote sensing use quantitative evidence to explain environmental processes and human–environment interactions. Students build statistical literacy through model-based reasoning linking real-world environmental questions to analytical methods. Core topics include data representation, variability and uncertainty, hypothesis formulation and testing, correlation, ANOVA, and regression modeling, with emphasis on using statistical models to examine variable relationships, evaluate explanations, and support scientific inference. Using spreadsheet tools, students analyze authentic environmental datasets from observational and applied research. Lab exercises and practical work teach them to interpret quantitative results, assess model reliability, and communicate environmental findings using graphs and statistical evidence.
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.
GEOG 3521	Physical Climatology	3	This course explores the dynamics of the climate system, focusing on the interactions between the atmosphere, oceans, cryosphere, and land surfaces. It covers key concepts like the carbon cycle, the greenhouse effect, natural climate variability, and climate sensitivity to external factors. Students will investigate both historical climate phenomena and human-induced climate change. Emphasis is placed on understanding physical principles and applying climate models to assess past, present, and future climate trends.
HIST 1373	Global Trade, Goods, and Consumption	3	This course examines globalization through the lens of commodities and consumption, using everyday goods as a framework to explore broader economic, social, political, and cultural processes. Spanning from the early modern period to the present, students analyze how the production, exchange, and use of goods shape global connections and inequalities. Key themes include consumption patterns, market integration, and the organization of labor across regions. The course also considers how meanings attached to goods evolve across different cultural and political contexts, offering insight into the complex dynamics of global interdependence.
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 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.

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HIST 2800	Digital History	3	Digital History introduces students to the methods, tools, and critical debates shaping historical scholarship in the digital age. The course focuses on historical data mining, computational text analysis, digital mapping, visualization, and web-based presentation of historical materials. Students will learn how historians use new technologies to analyze large datasets, interpret digitized archives, and communicate research to public audiences online.
JAPN 2011	Elementary Japanese I	3	Designed for students with little or no prior experience in the Japanese language, this course focuses on developing basic skills in speaking, listening, reading, and writing in Japanese. Students will learn essential vocabulary, grammar, and sentence structures necessary for simple daily communication. Through interactive activities, cultural insights, and practical exercises, students will begin to develop their ability to communicate in everyday situations and gain an understanding of Japanese culture.
KORN 1020	Introductory Korean I	3	Introductory Korean I is a beginner-level course designed to introduce students to the Korean language and culture. With a focus on developing basic communication skills in speaking, listening, reading, and writing, the course covers essentials such as Hangul script, vocabulary, and grammar. Topics include greetings, daily routines, family, and travel expressions. Cultural insights are integrated.
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.
MARK 4500	Technology Commercialization and Innovation Strategy	4	This course introduces the development and commercialization of new technologies. Students examine technology life cycles, industry evolution, and innovation strategies used by firms to gain competitive advantage. The course also explores key concepts such as competitive positioning, resource-based perspectives, disruptive innovation, intellectual property, and business models. In addition, students analyze innovation ecosystems, co-opetition, standards competition, and the impact of regulation on technology markets through discussions and case studies.
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 1536	Calculus with Analytic Geometry II	3	This is a mathematics course that builds upon the concepts introduced in Calculus I. The course covers integral techniques, ordinary differential equations, conic sections, polar coordinates, vectors, two- and three-dimensional analytic geometry, infinite series, sequences and series, Taylor series, numerical solutions of differential equations using Euler's method, and the convergence of improper integrals. This course aims to provide students with a deeper understanding of calculus and its applications in various mathematical and scientific disciplines.
MATH 2025	Introduction to Linear Algebra	3	This course comprehensively introduces linear algebra rigorously and abstractly. It includes fundamental topics with an emphasis on proofs, topics including vector spaces, linear transformations, matrices, determinants, eigenvectors and eigenvalues, inner product spaces, singular value decomposition, and canonical form. Students can apply their knowledge to solving linear algebra problems.
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.

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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 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 2261	Mathematical Reasoning and Proofs	3	This course bridges advanced mathematics and advanced theoretical study by developing essential proof-writing and analytical skills. Students will master fundamental proof methods including direct proof, contradiction, and mathematical induction while exploring logic, set theory, functions, and relations. The curriculum extends to number theory concepts and real number properties, with particular focus on developing precise mathematical communication and critical reasoning abilities. These foundational skills prepare students for success in upper-level mathematics courses that demand abstract thinking.
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 2452	Elementary Differential Equations	3	This course serves as a fundamental exploration of one of the most critical branches of mathematics, aiming to equip students with the essential knowledge and skills to understand, analyze, and solve differential equations. The course introduces some typical topics of differential equations, such as first and second order linear, Laplace transform and power series. Throughout the course, students will work on a variety of exercises and practical problems to reinforce their understanding and problem-solving skills.
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.

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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 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 3009	Introduction to Calculus III	3	Calculus III builds on single-variable calculus to introduce multivariable calculus, vector-valued functions, and advanced integration techniques in two and three dimensions. Students will explore parametric and polar representations of curves, sequences and series, vector geometry, functions of several variables, multiple integrals, and vector calculus.
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 models will be included.
MATH 3020	Experimental Design and Analysis	4	This course offers a step-by-step guide to the experimental planning process and the ensuing analysis of normally distributed data. We will not only examine the topics of sample size, crossed treatment factors, blocking factors, factorial experiments, nested models, and split-plot design, but also discuss response surface methodology, fractional factorial experiments, random effects and variance components, and computer experiments.
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 3105	Introduction to Number Theory	3	An introduction to the fundamental concepts and techniques of number theory, it covers topics such as divisibility, prime numbers, congruences, Diophantine equations, number-theoretic functions, and modular arithmetic. Special emphasis is placed on both theoretical foundations and practical applications, including cryptography. The course will develop problem-solving skills and explore the historical development of key number theory concepts.
MATH 3330	Multivariate Statistical Methods	3	This module deals with the theories and techniques of multivariate statistical analysis and their applications. It covers matrices, random vectors, multivariate normal distribution, estimation and hypothesis testing, regression models, principal components analysis, factor analysis, cluster analysis, discriminant analysis, and other core contents of multivariate statistical analysis. This also includes applications of data sets using statistical software.
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 for 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 used in this course.

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MATH 3372	Introduction to Analysis	3	This course is designed to provide students with a rigorous and comprehensive introduction to mathematical analysis. It delves into the basic principles of mathematical analysis, emphasizing the development of a solid theoretical framework to enhance problem-solving skills and promote a deeper appreciation for the subject. Topics include the real number system, limits of functions and sequences, differentiation and more.
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 3520	Discrete Mathematics With Applications	3	The course is structured to serve as an introduction to the realm of discrete mathematics, aiming to familiarize students with prevalent concepts and methodologies within this field. Its purpose is to acquaint students with fundamental ideas and methods from discrete mathematics that hold broad applicability. Topics included in this course will cover logic and proof, set theory, algorithms, functions, sequences, number theory, cryptography, mathematical induction, counting methods, graph theory applications, combinations, discrete probability, the inclusion/exclusion rule, relations, etc. Students will develop problem-solving skills and mathematical reasoning abilities.
MATH 3550	Mathematics of Personal Finance	4	This course teaches the mathematical and statistical tools used to make smart financial decisions. Students learn how to model saving, borrowing, inflation, taxes, government benefits, insurance, annuities, and investments using algebra, exponential and logarithmic functions, probability, and statistics. Emphasis is on applying these tools to real-life personal finance problems.
MATH 3890	Foundations of Time Series Analysis	3	This course is designed to provide students with a comprehensive understanding of time series data and the fundamental techniques and methods used to analyze and model such data. Time series data is prevalent in various fields, including economics, finance, environmental science, engineering, and more. This course will equip students with the knowledge and skills to make informed decisions, predictions, and forecasts based on time-dependent data.
MATH 4019	Stochastic Operations Research	3	Stochastic Operations Research explores the modeling and analysis of systems subject to randomness and uncertainty. Emphasis is placed on stochastic processes such as Poisson processes and Markov chains, with applications to real-world operational systems, including queuing models and service systems. The course provides students with both analytical tools and conceptual frameworks to understand and solve problems involving random events over time. Topics include transient and steady-state behavior, generating functions, differential-difference equations, and matrix-based methods used in queuing theory. This course equips students to analyze performance measures and optimize systems in engineering, logistics, communications, and service industries.
MATH 4255	Advanced Calculus	3	This course delves into the advanced techniques and concepts of calculus, with an emphasis on their applications in science and engineering. Students will explore multivariable integral theorems, multivariable functions, the calculus of variations, Green's Theorem, Stokes's and Divergence Theorems. The course bridges rigorous mathematical theory and practical problem-solving, preparing students for research or professional applications requiring advanced analytical skills.

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MATH 4525	Survey Sampling	3	This course focuses on the principles and techniques of sampling methods for survey research. It provides a thorough introduction to sampling methods, including simple random sampling, systematic sampling, stratified sampling, and cluster sampling. The course also covers advanced topics such as estimation techniques for domain totals/means, ratio estimation, post-stratification, and treatment of missing data. Additionally, students will gain hands-on experience in analyzing survey data using statistical software packages.
MATH 4877	Probability and Statistics	3	Understanding uncertainty and making informed decisions requires a solid grasp of probability and statistical methods. This course covers the fundamental principles of probability theory and statistical inference, combining theoretical foundations with practical data analysis. Topics include probability axioms, conditional probability, random variables, probability distributions, the Central Limit Theorem, hypothesis testing, and interval estimation. Emphasis is placed on both the mathematical underpinnings and the interpretation of results in real-world contexts. Students will also gain hands-on experience with the statistical computing environment R, enabling them to analyze data effectively and interpret statistical output.
MGMT 3300	Principles of Management	3	This course provides an introduction to the fundamental concepts, functions, and practices of management in modern organizations. Students will explore how managers plan, lead, organize, and control operations while navigating ethical challenges, diverse workforces, technological change, and global environments. Emphasis is placed on real-world applications, managerial decision making, effective communication, leadership, teamwork, and organizational adaptability.
MGMT 4399	Strategic Leadership and Change Management	3	This course delves into the dynamic intersection of business strategy and design thinking, equipping students with innovative methodologies and techniques that transcend conventional approaches to managing businesses. Focused on both current and evolving enterprises, the curriculum emphasizes the integration of creative processes, guiding multidisciplinary teams to realize organizational strategic objectives in brand, product, and service development.
MGMT 4420	Social Entrepreneurship	3	This course explores the principles, practices, and challenges of social entrepreneurship. It focuses on innovative and sustainable solutions that address social and environmental issues. Students will learn how to create, scale, and sustain social ventures, with a strong emphasis on balancing financial goals with social impact. The course blends theory with practice through case studies, real-world applications, and hands-on projects.
MGMT 4720	Strategic Human Resource Management	3	This course provides an in-depth understanding of how organizations can achieve sustainable competitive advantage by integrating human resource management with strategic planning. Students will explore key frameworks, tools, and evidence-based practices in strategic HRM, including workforce planning, talent management, performance management, reward systems, employee engagement, HR analytics, and the role of HR in organizational change. Through case studies, applied exercises, and analytical assignments, students will learn to diagnose HR challenges, design strategic solutions, and evaluate their effectiveness.
MUSC 2769	Jazz Appreciation	3	Exploration of jazz as a dynamic musical tradition rooted in African American cultural expression and shaped by social, historical, and artistic developments in the United States and beyond. The course examines stylistic evolution from early jazz to contemporary forms, focusing on the musical characteristics, improvisational practices, and cultural contexts that define each period. Emphasis is placed on active listening, enabling students to recognize key musical elements such as rhythm, form, timbre, and improvisation. Through guided listening, analysis of influential musicians, and discussion of jazz's relationship with other African American musical traditions, students gain a deeper understanding of jazz as both an artistic practice and a cultural voice.
PHIL 1100	Introduction to Philosophy	3	This course introduces students to philosophical inquiry, facilitating a thorough examination of essential questions that have influenced human thought across history. By critically analyzing fundamental philosophical themes, students will cultivate a profound comprehension of reality, the boundaries and origins of knowledge, the notion of God, and the quest for meaning in human life.

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PHIL 1120	World Religion I	3	This course provides a comprehensive introduction to the major religious traditions of Eastern cultures, focusing on their historical development, core beliefs, rituals, texts, and practices. Through a detailed study of Hinduism, Buddhism, Jainism, Sikhism, Confucianism, Daoism, and Shinto, students will explore the philosophical, ethical, and spiritual dimensions of these traditions. Special emphasis is placed on the interplay between religion, culture, and society, as well as the role of Eastern traditions in shaping global perspectives on spirituality and ethics.
PHIL 2305	Introduction to Logic	3	This course provides an introduction to the principles of logic, including symbolic logic, truth tables, and predicate logic. Students will learn how to analyze and evaluate arguments using logical principles and tools. By the end of the course, students should have a solid foundation in the principles of logic and reasoning and be able to apply these principles to everyday life and philosophical discourse. Additionally, they should learn how to translate natural language sentences into symbolic notation, construct truth tables and proofs, and evaluate arguments for validity and soundness.
PHIL 2400	Introduction to Business Ethics	3	This course explores ethical considerations and principles as they relate to the business world. The course examines the moral dimensions of various business practices and decisions, aiming to cultivate a critical understanding of ethical issues and develop skills for ethical decision-making in business environments. Topics covered include corporate social responsibility, ethical leadership, stakeholder theory, sustainability, business and the environment, consumer ethics, and global business ethics.
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 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 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.

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PHYS 2400	Principles of Electricity and Magnetism	4	This course builds upon the knowledge gained in classical mechanics and calculus courses. It provides an in-depth understanding of electric and magnetic fields, their properties, and their interactions. Topics covered include Coulomb's law, electric potential, Gauss's law, electric circuits, magnetic fields, electromagnetic induction, and Maxwell's equations.
PHYS 2537	Introduction to Electromagnetism	4	This course provides students with a solid foundation in the principles and concepts of electromagnetism. The course begins with an exploration of vector analysis, covering orthogonal coordinate systems and the calculus of field quantities. Students will learn about length, surface, and volume integrals, as well as the del operator, gradient of a scalar, divergence theorem, Stoke's theorem, and Laplacian. The course further examines the classification of vector fields and delves into electrostatic fields, including key concepts such as electric potential, capacitance, current, and current density. Additionally, magnetostatic fields, including inductance, will be explored.
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 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 1601	Introduction to Neuroscience	3	The primary objective of this course is to comprehensively introduce fundamental concepts of Neural Science. It offers overarching information about the structure and function of the nervous system and brain to examine how individual neurons communicate chemically. This course goes profoundly into the functions of the systems that serve the senses and command voluntary movements. Students can explore the neurobiology of the brain and behavior (including motivation, sex, emotion, sleep, language, attention, and mental illness) and how the environment modifies the brain.
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.
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.
PSYC 3500	Drugs and Behavior	3	The study of drugs and behavior explores how psychoactive substances influence the brain, body, and behavior. Emphasizing the principles of behavioral pharmacology, this course examines the biological mechanisms, psychological effects, and social implications of drug use. Students will learn how drugs act on the nervous system, how behavior influences drug effects, and how both pharmacological and environmental factors shape patterns of use, dependence, and addiction. The course integrates research from psychology, neuroscience, and pharmacology to provide a comprehensive understanding of how drugs modify human experience and behavior.

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PSYC 3801	Family Psychology	3	The family is a central influence on human development, behavior, and identity. This course examines the psychological, social, and cultural dimensions of families and intimate relationships in contemporary society. Through theories and empirical research, students explore marriage, partnership, parenting, and family systems across diverse contexts. Topics include changing family structures, communication and conflict, gender and power dynamics, parenting, divorce, resilience, and cross-cultural variations. Emphasis is placed on how psychological processes and social forces interact to shape family functioning and individual well-being.
SOCI 1060	Foundations of Sociology	3	Foundations of Sociology is a comprehensive course designed to provide students with a foundational understanding of the key concepts, theories, and methodologies within the field of sociology. The course aims to develop critical thinking skills and sociological imagination to analyze and interpret social phenomena, structures, and processes. By examining various social institutions, social interaction, and social change, students will gain insights into the complexities of human behavior and social relations.
SOCI 2450	Urban Sociology	4	This course examines the social organization and everyday life of cities. It explores how urban growth and development shape social interaction, culture, and inequality. Students analyze how factors such as the built environment, government policy, capitalism, globalization, and migration influence urban spaces and the experiences of people who live in them. The course reviews major theories of urban development and addresses key urban issues, including housing, segregation, gentrification, crime, public space, and climate change. Through discussion, case studies, and original data collection, students learn to apply sociological theories and research methods to understand urban problems and consider policy solutions.
STAT 1100	Introduction to Statistics	3	This course is an introduction to statistics, focusing on fundamental concepts and techniques for analyzing 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 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 2115	Analysis of Variance	3	This course provides students with a comprehensive understanding of the theory and application of analysis of variance (ANOVA) techniques in statistical analysis. With a specific focus on experimental design principles, it covers topics such as various ANOVA models, including one-way ANOVA, two-way ANOVA, and factorial ANOVA, multiple comparison methods, block design, and more. Students will develop the analytical skills and critical thinking abilities necessary to apply experimental design and ANOVA techniques effectively in research and decision-making contexts.
STAT 2140	Applied Statistics Research	3	The applied statistics course provides students with the fundamental knowledge and practical skills needed to analyze and interpret data. The course introduces students to the practical application of statistical methods in various fields. Topics include residual analysis, contingency tables, analysis of variance, proportionality inference, goodness of fit, tests for normality, two-sample comparisons, regression and correlation, tests for linearity and outliers. Students will develop the ability to apply statistical techniques to solve problems, make predictions, and derive meaningful insights from data. The course provides a solid foundation for those pursuing further studies in statistics, data science, or related fields.
STAT 3200	Statistical Methods for Data Science	3	The course provides an introduction to statistical methods commonly used in the experimental sciences for data analysis and inference. It covers fundamental techniques for analyzing data sets, including parameter estimation and inferential methods, encompassing graphical displays, summary statistics, probability concepts, sampling techniques, distributions, hypothesis testing, confidence intervals, t-tests, correlation, and simple linear regression. Through lectures, practical exercises, and assignments, students will develop a solid understanding of these statistical methods and their applications in scientific research.

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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 4100	Statistical Theory	3	This course provides a foundation in statistical theory, focusing on the probabilistic and mathematical underpinnings of statistical inference. It begins with the basics of probability, random variables, and distributions, and progresses to sampling theory, estimation, hypothesis testing, and applications to regression and categorical data. Emphasis is placed on theoretical derivations, mathematical expectations, and understanding the behavior of estimators. The course prepares students for advanced study in statistics and quantitative data analysis.
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.
STAT 4602	Statistical Inference and Regression	3	This course provides a rigorous introduction to the theory and methods of statistical inference and regression analysis. Topics include point and interval estimation, hypothesis testing, properties of estimators, distribution-free methods, and statistical power. Applications extend to simple and multiple linear regression, analysis of variance (ANOVA), and models for count data. Emphasis is placed on developing both theoretical understanding and practical skills in analyzing real-world data using modern statistical tools.

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