International Credit Program at Elmira College
Summer 2026 Course Listing as of 5/28/2026

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 2050	Introduction to Managerial Accounting	3	Managerial accounting is a foundational course designed to provide students with an understanding of the principles and techniques used in managerial decision-making and performance evaluation. The course focuses on the use of accounting information for planning, controlling, and decision-making within organizations. Topics covered include cost behavior, cost-volume-profit analysis, budgeting, variance analysis, performance measurement, and relevant costing.
ACCT 3550	Introduction to Auditing	3	This course introduces the fundamental concepts, standards, and practices of auditing with an emphasis on financial statement audits. Students will learn the auditing process from engagement acceptance through audit reporting, including audit planning, risk assessment, internal control evaluation, evidence collection, sampling, and professional judgment. The course also covers ethical responsibilities, legal liability, and the expanding role of assurance services.
ACCT 4252	Advanced Financial Accounting	3	Students are introduced to accounting for capital combination. The increasing importance of complex topics in financial reporting, including accounting for business combinations, special purpose entities, foreign currency transactions, consolidating foreign subsidiaries, and ethics and policy issues for the profession is also explored. The course aims to provide students with a deep understanding of these topics and their practical applications in the business environment.
ANTH 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 1109	Foundations of Drawing	3	This course is designed to introduce students to the essential skills and techniques in drawing through observation. It emphasizes the development of fundamental technical, perceptual, and conceptual skills using common drawing media. Students will learn how to approach the world visually, translate what they observe into drawings, and understand how various drawing methods can aid in creating effective pictorial compositions. The focus is on honing skills required for accurate and expressive representations while understanding how to organize visual elements in a coherent composition.
ARTH 1114	African and Latin American Art	4	This course provides an in-depth exploration of the artistic traditions of Africa and Latin America from pre-colonial and pre-Columbian periods to contemporary global practices. It examines the diversity of visual cultures across both regions, with particular attention to colonial encounters, diasporic identities, religious syncretism, and socio-political transformations. The course highlights how artists respond to issues of nation-building, globalization, gender, and social justice. Emphasis is placed on cross-cultural dialogues, the legacy of the African diaspora, and the evolving role of museums and cultural heritage in shaping artistic narratives.

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ARTH 2080	Art and Visual Culture	3	This course explores art and visual culture as instruments of knowledge and human expression across time, place, and media. Students study major artistic forms (painting, drawing, sculpture, design, digital media), survey key periods in art history from the ancient world to the present, and examine thematic issues such as identity, spirituality, power, and the environment. The course emphasizes visual literacy, critical thinking, and contextual analysis.
ARTH 2260	Introduction to Modern Art	3	This course offers an in-depth exploration of the evolution and transformation of artisticexpression in the modern era, spanning roughly from the late 19th century to the mid-20th century. Students will engage with various art movements, key artists, and critical concepts that shaped the trajectory of modern art. The curriculum integrates historical context, theoretical frameworks, and critical analysis to foster a deep understanding of the diverse and revolutionary developments in the art world during this period.
ARTH 2550	Introduction to Music Analysis	3	This course introduces students to the foundational tools, concepts, and methodologies used inthe analysis of Western music from the Medieval period to the present. Students will learnmodern and historical notation, examine rhythm, melody, harmony, counterpoint, texture, andform, and apply analytical techniques to a wide range of repertoire. The course culminates inintegrative analyses that combine multiple theoretical perspectives.
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 these 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 3050	Molecular Biology I	4	This course teaches the basic concept and theoretical knowledge of biologically important molecules.The course will help students to discover the diverse range of biochemical,genetic and microbiological approaches needed to understand life at a molecular level.Topics to be covered include gene structure and gene regulation,DNA replication,genetic recombination and protein synthesis,etc.This course will provide students with a solid foundation for studying and researching other major areas such as genetics,cell biology,physiology etc.
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 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 3210	Introductory Developmental Biology	4	This course examines the cellular,molecular,and genetic mechanisms that regulate the development of multicellular organisms from fertilization through adulthood.Topics include early embryonic development,axis formation,cell differentiation,morphogenesis,stem cells, organogenesis,neural development,regeneration,and evolutionary developmental biology. Comparative approaches using model organisms such as Drosophila,sea urchins,amphibians, birds,and mammals are integrated throughout the course.Emphasis is placed on experimental approaches and current advances in developmental biology and regenerative medicine.
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 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.
BUSI 1002	Introduction to Business	3	A foundational understanding of business is essential for professionals in the creative industries. This course introduces students to the principles and practices that shape modern business operations, with emphasis on entrepreneurship, management, finance, marketing, and global dynamics. Students explore how businesses function within economic, social, and technological contexts while examining ethical and sustainable approaches to decision-making. Through case studies and real-world applications, the course connects core business concepts — such as accounting, human resources, intellectual property, and branding — to creative and cultural enterprises.
BUSI 1900	Introduction to Business Law	3	Introduction to Business Law is designed to provide students with a foundational understanding of the legal principles and concepts that govern business activities. Through the exploration of various legal topics, including contracts, torts, agency, business entities, and intellectual property, students will develop essential skills in legal reasoning, analysis, and application within the context of business operations. The course emphasizes the practical implications of legal principles for decision-making and risk management in a business setting.
BUSI 2212	Professional Business Writing	3	This comprehensive course is designed to equip students with the essential skills needed to communicate effectively within the dynamic and diverse environments of organizations, spanning corporations, government agencies, and non-profit organizations. The course focuses on developing students' proficiency in written communication, a critical aspect of professional success in various career paths that demand substantial interaction within and outside organizations.
BUSI 2213	Business Analytics and Decision	3	This course is designed to equip students with the knowledge and skills to leverage business analytics for enhancing decision efficiency, driving profitability, and ensuring long-term sustainability in various business contexts, covering descriptive, predictive and prescriptive analytics.. Participants will explore how analytics contributes to management, finance, marketing, and organizational planning to optimize strategic decision-making.
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 3010	Business Ethics and Values	3	This course introduces the principles, frameworks, and applications of business ethics and values in contemporary organizations. Students will explore ethical theories, stakeholder perspectives, sustainability practices, global ethics issues, and the development of ethical corporate cultures. Through case studies, discussions, and applied assignments, students will develop the skills needed for ethical decision-making in diverse business environments.
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
BUSI 4860	Entrepreneurial Strategy	3	This course provides an overview of entrepreneurial strategy, small-business development, and the policy environment in which entrepreneurs operate. With a focus on both traditional small businesses and mission-driven ventures, students analyze how entrepreneurs recognize opportunities, validate problems, develop value propositions, build teams, design organizational structures, and scale emerging enterprises. The course emphasizes case analysis, stakeholder mapping, and systems thinking to help students understand the complex landscape new ventures must navigate.
CHEM 1440	Principles of Chemical Reactivity	4	This course offers a comprehensive introduction to basic concepts of organic chemistry with an emphasis on understanding the principles of chemical reactivity. It delves into the interaction between molecular structure and the dynamic processes of chemical reactivity. Topics will cover atomic and molecular structure, the covalent bond, chemical thermodynamics, equilibrium, kinetics, and mechanisms in proton transfer reactions, alkyl substitutions, and acyl substitution reactions. Students can develop a deeper understanding of organic reactivity through various experiments and critically apply their accumulated knowledge to practices.
CHEM 1721	General Chemistry I	4	General Chemistry I is an introductory course that provides students with a foundational understanding of the principles and theories of chemistry. Topics covered include atomic structure, chemical bonding, stoichiometry, kinetic molecular description of the states of matter. Emphasis will be placed on developing problem-solving skills and critical thinking in the context of chemical phenomena. Laboratory experiments and demonstrations will complement theoretical concepts to enhance understanding.
CHEM 1722	General Chemistry II	4	General Chemistry II is a continuation of General Chemistry I, focusing on advanced topics in chemistry including chemical equilibrium, thermodynamics, kinetics, electrochemistry, and descriptive inorganic chemistry. The course aims to deepen students' understanding of chemical principles and their applications in various fields of science and technology. Laboratory experiments and problem-solving exercises will reinforce theoretical concepts.

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 2320	Organic Chemistry II	4	Organic Chemistry II is the continuation of Organic Chemistry I, focusing on advanced topics in organic chemistry. The course delves into the structure and reactivity of organometallic compounds, radicals, aldehydes, ketones, carboxylic acids and their derivatives, enolates, aromatic systems, amines, heterocyclic compounds, and modern methods and techniques inorganic structure elucidation.
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 able to understand basic concepts, laws of thermodynamics and heat transfer and their applications as well.
CHEM 4526	Instrumental Methods of Chemical Analysis	4	This course introduces the principles, operation, and applications of modern analytical instruments used in chemical analysis. The course covers spectroscopic, electrochemical, chromatographic, and mass spectrometric techniques commonly employed in pharmaceutical, environmental, industrial, and research laboratories. Students will develop an understanding of signal generation, data acquisition, instrumentation components, and analytical method selection. Laboratory sessions provide practical experience in operating analytical instruments, interpreting experimental data, and applying instrumental techniques to qualitative and quantitative chemical analysis.
COMM 1080	Introduction to Public Speaking	3	This course is designed to develop students' skills in public speaking and to provide a comprehensive overview of the theories and practices that underlie effective communication. The content will be covered include: theory, practice, analysis, and ethics of public speaking. Students will learn how to analyze their audience and tailor their messages accordingly, how to organize their thoughts effectively, and how to do rhetorical choice and use various delivery techniques to engage and persuade their listeners.
COMM 2026	Introductory Advertising	4	This course provides a foundational examination of advertising as a strategic communication practice within integrated marketing systems. It investigates the historical evolution, economic and social functions, and institutional structures that shape contemporary advertising. Emphasis is placed on consumer behavior, psychological appeals, brand positioning, and message design, alongside the role of media planning, research methodologies, and data-driven decision making. The course also addresses ethical and regulatory considerations, as well as the organizational dynamics of agencies and client relationships. Through analytical and applied work, students develop the capacity to design comprehensive advertising plans, including market analysis, strategic development, creative execution, and speculative campaign production.
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 2356	Cross-Cultural Communication	3	This course explores the intricate dynamics of intercultural communication within the diverse context of multicultural Canada. Students will delve into the theoretical foundations that underpin effective communication across cultures and countries, gaining insights into the complexities of intercultural interactions. The primary focus will be on understanding, analyzing, and applying key theories relevant to communication in diverse cultural settings.
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 4100	Strategic Internal Communication	3	This course examines the principles and practices of strategic communication within organizations,with a focus on communication among internal stakeholders including senior leaders,managers,and frontline employees.Students will explore communication flows, audience analysis,message design,digital communication platforms,leadership communication, change management,and employee engagement strategies.
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 1111	Programming for Data Science	3	Embark on a comprehensive journey into the realm of programming and data science with this introductory course. Delve into Python, a powerful language ideal for beginners, as you explore core concepts like data types, control flows, and functions. Extend your skills into data analysis, utilizing packages such as Pandas and Matplotlib to visualize and interpret data effectively. By the end, you'll possess a solid foundation to approach and solve real-world problems using computational methods.
COMP 1220	Data Analysis with Excel	3	This course centers on Microsoft Excel as a core tool for conducting numerical calculations, data analysis, regression analysis, and developing scientific graphs. With a strong emphasis on its applications in chemistry, biochemistry, and allied scientific fields, it will walk students through leveraging advanced Excel techniques to solve equations, manipulate datasets, and analyze experimental findings. By the conclusion of the course, learners will have established a firm grasp of how to utilize Excel's built-in functions and tools to carry out scientific data processing, visualization, and interpretation effectively.
COMP 1305	Computer Programming in Python	3	This course will use Python as our primary programming language and compare it to the structures in other high-level programs. It surveys fundamental concepts in computer programming and data science, including data types, functions, modules, classes, and methods. Additionally, it goes deeper into the testing and debugging of a program. Students are required to write and run basic programs
COMP 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 1400	Introduction to MATLAB Programming	3	This course provides an introduction to MATLAB programming and explores its applications inmachine learning. Students will learn fundamental programming concepts, data structures, andtechniques for solving engineering and scientific problems using MATLAB. Additionally, the coursewill introduce basic concepts of machine learning and demonstrate how MATLAB can be used formachine learning. At the end of the course, students should be able to use MATLAB in their ownwork, and be prepared to deepen their MATLAB programming skills and tackle other languages forcomputing.
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, responsive web design will be introduced. And this course contains several innovative techniques such as design thinking, storytelling, gamification,VR/AR as well. In this course, students will gain a comprehensive understanding and practical skills in digital design, preparing them for the evolving design landscape.
COMP 2036	Object Oriented Programming	3	This course serves as an introduction to the fundamentals of programming using the Java programming language. Students will learn the basics of algorithmic thinking, problem-solving, and the principles of object-oriented programming (OOP). The course will cover essential programming concepts, syntax, and techniques, empowering students to write well-structured and efficient Java code. Students will gain practical experience applying their programming knowledge to real-world scenarios.
COMP 2050	Introduction to Computer Science	4	This course serves as a general introduction to computer science, aimed at dispelling the mystery surrounding computers. The computer is presented as a versatile tool capable of solving a wide range of problems. On one level this course teaches students programming concepts, in particular, binary logic and algorithmic problem solving. On another level this course uses programming as a means to an end, focusing on understanding the fundamental problems within computer science, such as looping, searching, sorting, and data structure.
COMP 2070	Introduction to Informatics	3	This course explores the core principles of information science, examining how information is created, organized, retrieved, and applied across various contexts. Students will gain an understanding of the social, cultural, and technological factors that shape information systems and their use. The course emphasizes the interplay between theoretical concepts and practical applications, offering insights into the design, management, and ethical considerations of information systems. Through case studies and hands-on projects, students will develop critical skills for navigating the modern information landscape.
COMP 2073	Digital System	3	This course covers the principles of digital design,including Boolean algebra,logic gates, sequential and combinational circuits,and memory systems.Students will learn to design and analyze digital systems using Verilog,and explore advanced topics like FPGAs,ASICs,and programmable logic devices.Hands-on practice and real-world applications will help students gain a comprehensive understanding of digital circuit design..
COMP 2112	Data Structures and Algorithms	3	In this course, students engage with advanced programming by exploring the synergy between data structures and programming language features. The course emphasizes the design of large-scale software systems, focusing on object-oriented programming, data abstraction, polymorphism, and higher-order functions. Through a blend of theory and practical applications, students gain proficiency in crafting flexible, efficient, and scalable code structures. The course empowers participants to navigate complex programming challenges and contribute effectively to the development of sophisticated software systems.

COMP 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 2580	Introductory C++ Programming for Engineers	3	This course is designed to equip students with the essential programming skills needed to tackle engineering problems through a procedural-oriented approach in the C++ programming language. C++ is known for its efficiency, flexibility, and wide-ranging applications, making it a vital tool in various engineering disciplines. And the course emphasis on numerical algorithms, which are crucial for solving complex engineering challenges.
COMP 3100	Algorithms for Data Science	4	This course introduces fundamental concepts in algorithms and data structures, focusing on how to design, analyze, and evaluate efficient computational solutions. Topics include algorithmic complexity, graph algorithms, greedy methods, divide-and-conquer, dynamic programming, and network flow. The course also covers computational intractability, approximation methods, and randomized algorithms, with applications to large-scale and real-world problem solving.
COMP 3120	Operating Systems	3	This course provides a comprehensive introduction to the fundamental concepts, theories, and design principles of operating systems. Topics covered include operating system structures, process management, memory management, synchronization, deadlocks, file systems, CPU scheduling, and virtual memory. Students will explore both theoretical underpinnings and practical implementations of operating systems, as well as concepts related to protection and security, distributed systems, and real-time operating systems. By the end of the course, students will have a solid understanding of how operating systems function, manage hardware resources, and ensure system stability and security in a multi-user environment.
COMP 3125	Software Engineering	3	This course provides an in-depth exploration of both object-oriented and traditional software engineering methodologies, building upon the foundational analysis and design concepts previously introduced. It introduces students to the principles and practices of object-oriented programming (OOP) using C++. Emphasizing key OOP concepts such as encapsulation, inheritance, and polymorphism, the course provides a strong foundation in C++ syntax, structures, and libraries. Students will develop problem-solving skills through practical exercises, labs, and programming projects, enabling them to design and implement efficient, reusable, and maintainable software.
COMP 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 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.
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.
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 4260	Deep Learning	4	This course introduces the basic concepts and applications of artificial intelligence, machine learning, and deep learning. Students will learn the foundations of neural networks, data preprocessing, model training, and deep learning techniques using Python and modern frameworks. Topics include neural networks, optimization, convolutional and recurrent neural networks, natural language processing, transformers, and generative models. Through lectures and laboratory activities, students will gain hands-on experience applying deep learning methods to text and image data.
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 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 designed to provide students with a foundational understanding of economic principles at the individual and firm level. The course covers topics such as supply and demandconsumer behavior, production, costs, market structures, and the role of government in theeconomy. Through a combination of lectures, readings, discussions, and practical exercisesstudents will develop the analytical tools needed to comprehendand analyze microeconomicconcepts and real-world economic issues.
ECON 1080	Introduction to Macroeconomics	3	This course provides students with a comprehensive understanding of the principles, concepts, and analytical tools that govern the study of the broader economic system. Topics contain the components of aggregate demand, national income determination and multiplier theory, business cycles and more. Through a blend of theoretical exploration, real-world applications, and critical thinking exercises, this course offers a solid introduction to the macroeconomic factors that shape national economies and impact global markets.

ECON 2043	Macroeconomic Theory 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 2048	Money and Banking	3	The course is designed to provide students with an overview of the field of money and banking and its significance in the economy. It explores the intricate relationship between money, financial markets, and the macroeconomy. Main topics include money, interest rates, the stock market, banking industry, financial markets, financial Regulation and monetary policy in the economy, etc. At the end of the course, students will understand better the role of money and the financial market in our economy.
ECON 2119	Economics of Innovation	3	Innovation drives long-run economic growth by transforming ideas into productive technologies, products, and processes. This course applies microeconomic theory to understand how incentives, institutions, and market structures shape the creation and diffusion of innovation. Using toolsfrom industrial organization, public economics, and contract theory, students will examine howfirms identify and close productivity gaps, how governments design policies that stimulateinventive activity, and how intellectual property rights and research incentives influence theinnovation ecosystem. Emphasis is placed on models of cumulative innovation, the economics ofintellectual property, optimal prize and subsidy design, and the strategic behavior of firms ininnovative industries.
ECON 2134	Probability and Statistics for Economists	3	This course introduces the fundamental statistics concepts. Probability and statistical concepts play an important role in the economic analysis and applications. The emphasis is on using statistical methods to make economic decisions. Key topics include descriptive statistics, random variables and probability, point and interval estimation, sampling distributions, hypothesis testing. Students will learn the principles of collecting, organizing, and summarizing economic data.
ECON 2910	Pre-Industrial Global Economics	3	This course offers a comprehensive exploration of global economic history before the Industrial Revolution, with a particular focus on diverse regions such as England, China, Polynesia, and Pre-Columbian America. Students will analyze the economic dynamics of these distinct societies, examining factors such as trade practices, agricultural systems, and socio-economic structures. By comparing and contrasting the development trajectories of these regions, the course seeks to uncover the unique influences that shaped their pre-industrial economies.
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 3051	Econometrics	3	This course introduces students to the fundamental concepts and techniques of econometrics, focusing on economic applications of statistical methods. Students will learn how to use simple and multiple regression analysis to analyze economic relationships, test hypotheses, and make economic predictions. By the end of the course, students will be able to critically evaluate economic models and apply econometric techniques to real-world economic problems.
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 3350	Regional and Urban Economics	3	Urbanization drives economic growth but unfolds differently across developed and developing countries. This course explores the forces behind rapid urbanization, the role of migration, and the structure of formal and informal labor markets. It examines agglomeration economies, housing markets, infrastructure, and the economic trajectories of cities driven by high-value commodities versus manufacturing and services.Students will analyze urban transportation, governance, and environmental challenges while assessing the impact of urbanization on poverty, inequality, and upward mobility. Through theoretical models and case studies, the course provides insights into sustainable urban development and regional economic strategies.
ECON 3510	Economics of Less Developed Countries	4	This course examines the economic conditions, challenges, and opportunities in less-developed regions. It explores the factors contributing to underdevelopment, the role of government and international institutions, and strategies for sustainable economic growth and poverty alleviation. Students will develop analytical skills to evaluate development issues and propose evidence-based solutions.

ECON 3516	Central Banking and Monetary Policy	3	This course delves into the intricate world of Money and Banking, exploring the fundamental structures of financial institutions and their pivotal roles in the creation and distribution of money and near-money assets. Students will gain a comprehensive understanding of the Federal Reserve System, examining its inner workings and the techniques employed by central banks in controlling the supply of financial assets to implement effective stabilization policies.
ECON 3700	Labour Economics	3	The main objective of the course is to foster a comprehensive understanding of the theoretical and empirical foundations of the labour market. This course uses many examples drawn from state-of-the-art studies in labor economics literature. The topics include labour supply, labour demand, labour market, union, wage structure, compensating differentials and Phillips curve.
ECON 3850	The Economics of Sports	3	This course applies core economic concepts and theories to the world of sports, focusing on both U.S. and international contexts. By using microeconomic theory and empirical methods, students will explore the economics of sports leagues, player salaries, competitive balance, and the economic impact of sports on local economies. A particular emphasis will be placed on international sports, such as European football, and how labor markets are managed to maximize league and team revenues. The course also investigates issues like wage disparities among athletes, sports franchise valuation, and the role of government policy in sports economics.
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 4115	International Finance	3	ECON 4115 provides students with engaging, balanced coverage of the key concepts and practical applications of International Finance. Topics covered include balance of payments, exchange rates, economic policies, International Monetary System, financial globalization and International financial institutions. Core theoretical principles will be complemented by a series of application chapters that confront policy questions using the latest empirical work, data, and policy debates.
ECON 4200	Global Development Economics	3	This course provides an in-depth analysis of economic development theories, policies, and practices. It explores the factors influencing economic growth and development in low-income countries, as well as the challenges and opportunities they face. Topics covered include poverty, inequality, education, health, agriculture, industrialization, trade, finance, governance, and sustainable development. The course also examines the role of international organizations, policies for promoting inclusive growth, and the evaluation of development interventions.
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 1140	College Writing	3	The College Writing is designed to introduce students to various writing genres and help themdevelop effective communication skills through written expression. The course will focus on thewriting process, emphasizing key aspects of academic writing and expository prose. Students willengage in both creative and analytical writing tasks, developing their abilities in crafting clear, coherent, and well-organized texts. Topics covered will include sentence-level issues, paragraphstructure, rhetorical strategies, organization, style, and form. By the end of the course, students willbe equipped with the skills needed to write effectively in academic and professional settings.
ENGL 1141	Writing Workshop	1	This course offers an immersive introduction to creative writing in a collaborative workshop setting. Students will develop their skills in crafting character-centered stories, poetry, and prose through imaginative exercises, readings, and group discussions. Emphasis is placed on experimentation, constructive critique, and nurturing each writer's unique voice. Students will explore diverse genres and perspectives while refining their ability to write and evaluate creative work. By the end of the course, each student will produce a portfolio of polished pieces and may share their work in a final public reading or submission opportunity.
ENGL 1150	Writing as Critical Inquiry	3	This course is designed to elevate your proficiency in writing, reading, and research. Throughcritical examination of texts, you will refine your reading skills, pose thought-provokingquestions, and establish meaningful connections that will be incorporated into your writing. Employing rhetorical strategies, you will craft well-supported claims within discussions centeredon diverse literacy perspectives. The course aims to not only enhance your writing abilities butalso deepen your understanding of the nuanced interplay between reading, questioning, andresearch in the construction of compelling and informed written expressions.
ENGL 1156	Academic Essay Writing	3	The course is designed to equip students with the essential skills and techniques in academic essay writing. The course emphasis preparation of research papers, essay organization, paragraph writing, rewriting and revising of the essay and proper acknowledgment of sources. By the end of this course, Upon completing this course, students should be able to conduct independent research on a specific topic and construct a persuasive argument using grammatically correct prose.
ENGL 1251	Rhetoric and Composition	3	This course introduces students to rhetorical concepts, teaching them to apply these principles in crafting diverse genres of writing tailored to specific rhetorical contexts. Through iterative revision, students refine their drafts, editing their work to achieve polished texts, and engaging in reflective analysis of their writing process. Additionally, students practice reading complex texts and utilizing information technologies.
ENGL 1500	Selected Topics in Literature	3	This course is designed to enhance students' critical reading skills and cultivate their abilities in coherent discourse through the exploration of selected topics in literature and composition. Emphasizing the proper use and acknowledgment of sources, students will engage in discussions and complete written assignments based on readings from various genres. The course aims to develop analytical thinking, writing proficiency, and a deeper appreciation for literature.
ENGL 2120	Introduction to Literature	3	This course is focused on building your reading, writing, and research skills through the study of fiction, poetry, and drama. Students will learn to interpret and discuss literary texts, develop arguments, and practice clear, effective composition across analytical and creative forms.
ENGL 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, identityperformance, and social activism in contemporary media. Drawing on case studies of hashtagmovements, algorithmic surveillance, and online self-presentation, students will analyze howdigital platforms transform communication. Through research-informed projects, participantswill create multimodal content that engages with issues of knowledge equity, communityformation, and digital authority. The course emphasizes both critical analysis of digital genresand 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.
ENGL 3250	Contemporary Nonfiction	3	This course explores contemporary literary nonfiction, focusing on the diverse forms and themes that define this genre from the 1960s to the present, with a focus on narrative nonfiction, memoir, and personal essay. Through the study of seminal and contemporary works, students will explore the stylistic, thematic, and cultural contexts that have shaped these genres. The course aims to provide a comprehensive understanding of how literary nonfiction has transformed over the past six decades and its ongoing relevance in contemporary literature.
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.
ENGL 3420	Scientific Writing	3	This course introduces students to the principles and practices of scientific writing across a range of genres, including research articles, proposals, and public-facing communication. Emphasizing clarity, precision, and integrity, the course guides students through the full writing process—from planning and literature review to drafting, revising, and presenting scientific work. Students will learn the standard structure of scientific papers (IMRaD), develop skills for writing each section effectively, and practice adapting complex scientific information for diverse audiences. The course also covers visual and oral communication, collaborative writing, and ethical considerations in scientific communication.
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.
EXSC 1800	Introduction to Sport Management	3	This course provides a comprehensive overview of the sport management field, introducing students to the structure, functions, and challenges of the sport industry. Students will explore foundational management principles, key sectors of sport (youth, interscholastic, intercollegiate, and professional), sport marketing, finance, communication, legal and ethical issues, and global perspectives.
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 1 introduces students to the rich film history and the evolution and development as a powerful medium of expression. Key theme include the history of American and international filmmaking from 1895 to 1960, the Hollywood's film studio system.The course explores the cultural, technological, and artistic advances that have shaped the film medium. Students will learn about key film history milestones, influential filmmakers, and groundbreaking films that have shaped film art and industry.
FILM 3150	American Film History	4	This course offers a comprehensive survey of American film history from its origins in the late 19th century to the contemporary media landscape. Students will examine the evolution of the American film industry alongside major technological innovations, economic transformations, regulatory frameworks, and cultural developments.
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 3500	Corporate Finance	3	Corporate Finance is designed to provide students with a comprehensive understanding of financial principles and techniques relevant to decision-making within corporations. The course covers various topics such as capital budgeting, cost of capital, financial analysis, capital structure, dividend policy, and risk management. Through theoretical concepts and practical applications, students will develop the skills necessary to evaluate financial opportunities and make informed strategic decisions to maximize shareholder value.
FREN 1080	Elementary French I	3	Tailored for students with little or no prior experience in the French language, this course provides a solid foundation in French by focusing on essential vocabulary, basic grammar, and practical communication skills. Students will engage in elementary level oral and written expression activities to develop proficiency in listening, speaking, reading, and writing in French learning, with an emphasis on practical usage and cultural understanding.
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.
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.
GEOG 3560	Introduction to Geodesy and Geometics	3	This course covers fundamental principles of geodesy, surveying, and various geomatics technologies used in collecting, analyzing, and visualizing spatial data. Students will develop essential skills in geodetic datums, coordinate systems, surveying techniques, and the application of geomatics tools in solving real-world problems in geography and related disciplines.
HIST 2021	Introduction U.S. History to 1876	3	This course presents the political, social, economic, and cultural history of the United States from the beginning of the colonial period to the end of reconstruction in 1876. Exploring topics such as the colonial period, revolution, confederacy and constitution, the Civil War and reconstruction, students will examine the fundamental events and ideas that shaped the nation and its people during this critical period. Students gain a comprehensive understanding of the United States history to 1876.
HIST 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.
HIST 3600	American Religions	3	This course investigates the role of religion in shaping American life from pre-colonial Indigenous traditions to twenty-first-century.We will explore how religion intersected with politics,identity,social movements,law,and memory.Through primary sources and scholarly debates,students will critically examine the evolution and influence of religious ideas and institutions in American history,addressing key themes such as pluralism,religious freedom, civil religion,and the culture wars.

HLTH 3251	U.S. Healthcare System	3	This course provides a comprehensive overview of the U.S. healthcare system from a populationperspective. Students will explore the historical development, organization, and performance ofhospitals, ambulatory care, and long-term care. The course examines the roles of medicaleducation, the healthcare workforce, financing mechanisms, public health, and governmentpolicy in shaping healthcare delivery. Through discussions on health information technology, mental health services, and ongoing research, students will gain insights into the currentchallenges and future directions of healthcare in the United States.
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 3107	Sports Marketing	3	This course examines the application of core marketing principles within the sport industry, emphasizing strategic decision-making in a dynamic and highly competitive environment. It explores the structure and unique characteristics of sport markets, including the behavior of sport consumers, the role of branding, and the integration of promotional and sponsorship strategies. Students analyze contemporary industry trends that necessitate data-driven and professional marketing approaches, including globalization, digital media, and fan engagement. The course also addresses key functional areas such as market research, pricing, distribution, and integrated communication strategies as they apply specifically to sport organizations, events, and products.
MATH 1526	Introduction to Calculus I	4	Calculus I introduces the fundamental concepts of differential and integral calculus. Students will develop an understanding of functions, limits, derivatives, and integrals, along with practical techniques and applications. This course provides the foundation for further study in mathematics, science, and engineering
MATH 1535	Calculus with Analytic Geometry I	3	An introductory course in calculus and analytic geometry that focuses on the core concepts andapplications of single-variable calculus. It develops a strong foundation in differential andintegral calculus, with an emphasis on understanding the geometric interpretation of theseconcepts. Topics include functions, limits, derivatives, L'Hopital's Rule, antiderivatives, anddefinite integrals. Students will learn to solve a variety of problems using calculus, includingoptimization, related rates, and modeling real-world phenomena.
MATH 1536	Calculus with Analytic Geometry II	3	This is a mathematics course that builds upon the concepts introduced in Calculus I. The course coversintegral techniques, ordinary differential equations, conic sections, polar coordinates, vectors, two- andthree-dimensional analytic geometry, infinite series, sequences and series, Taylor series, numericalsolutions 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 invarious mathematical and scientific disciplines.
MATH 2015	Introduction to Calculus II	3	MATH 2015 is the second course in the calculus sequence. It builds upon the concepts covered in MATH 1526 (Introduction to Calculus I) and delves deeper into integration techniques, applications of integrals, sequences, series, and more. The course aims to develop students' understanding of calculus and its applications in various field.
MATH 2016	Introduction to Mathematical Methods	3	Mathematical Methods is an introductory course designed to equip students with fundamental mathematical tools necessary for advanced studies in various fields such as physics, engineering, economics, and computer science. The course covers topics including calculus, linear algebra, differential equations, and probability theory. Through lectures, problem-solving sessions, and practical applications, students will develop proficiency in mathematical techniques essential for modeling, analysis, and problem-solving in diverse disciplines.

MATH 2245	Multivariable Calculus	3	This course extends the principles of calculus from single-variable functions to functions with multiple variables. Topics include vectors, vector-valued functions, Green's Theorem, Stokes ' Theorem, and Gauss' Theorem, multivariable functions, partial derivatives, multiple integrals, line integrals, surface integrals, vector fields, and their applications. Additionally, students will explore applications in physics, engineering, and other fields.
MATH 2246	Calculus with Analytic Geometry III	3	This course is the third part of a multi-semester sequence in calculus with analytic geometry. It builds on previous calculus courses by introducing advanced concepts in multivariable calculus, vector analysis, and their applications in real-world problems. Topics include vector algebra, vector-valued functions, partial derivatives, multiple integrals, vector fields, and the fundamental theorems of vector calculus. This course is designed for students pursuing mathematics, physics, engineering, or other fields that require a strong foundation in advanced calculus.
MATH 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 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.

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 2851	Foundations of Stochastic Processes	3	This course provides a foundational understanding of stochastic processes, focusing on key concepts such as Markov chains, random walks, martingales, Galton-Watson trees, branching processes, Poisson processes, point processes, birth and death processes, queuing theory, stationary processes, as well as simulation and inference for stochastic models. Through theoretical study and practical applications, students will develop the necessary tools to analyze and model random phenomena in various fields including mathematics, statistics, engineering, and finance.
MATH 3006	Abstract Algebra	3	This course explores the foundational concepts and structures of abstract algebra, emphasizing integers, sets, groups, and rings. Topics include properties of integers, group theory (with a focus on permutation and cyclic groups), Lagrange's theorem, subgroups, normal subgroups, quotient groups, and the external direct product of groups. Additionally, the course introduces homomorphisms, isomorphisms, rings, and fields. The focus is on understanding these concepts through rigorous proofs and practical applications in mathematics and related fields
MATH 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 model will be included.
MATH 3016	Basics of Mathematical Modeling	3	This course serves as an introduction to computational modelling, emphasizing the application ofsoftware tools such as R or MATLAB. It aims to equip students with the knowledge and tools necessaryfor critical thinking, problem-solving, and effective communication in the context of modelling complexsystems. Through a combination of theoretical foundations and hands-on practical exercises, students willgain a comprehensive understanding of modelling techniques and their applications across variousdisciplines.
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 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 set 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 of differential equations, error analysis, the number of conditions for a linear system, linear and nonlinear systems. By the end of the course.students will develop the skills necessary to apply numerical methods effectively. MATLAB software will be uses in this course.
MATH 3372	Introduction to Analysis	3	This course is designed to provide students with a rigorous and comprehensive introduction to the 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 3420	Modern Abstract Algebra	3	This course delves into the study of groups, rings, and fields, which are fundamental algebraic structures, and investigates their properties, operations, and applications. It offers a deep understanding of algebraic concepts beyond elementary algebra. Students will develop a solid understanding of algebraic systems and their applications in diverse mathematical contexts. Course topics include groups, group homo-morphisms， cyclic groups, cosets, Lagrange's theorem, normal subgroups, introduction to rings, ring homomorphisms and more.
MATH 3500	Applied Machine Learning	3	This course introduces students to a wide range of machine learning techniques and tools used in data analysis, predictive modeling, and pattern recognition. The course covers a comprehensive range of topics, such as multivariate linear and multiple regressions, k-nearest neighbors and bootstrap. And it also introduces some typical Statistical Learning methods, including naive Bayes, cross-validation, tree-based methods and so on. Through a combination of theoretical concepts and practical applications, students will gain a solid foundation in machine learning methods.
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 3521	Mathematical Interest Theory	3	This course offers a rigorous introduction to the fundamental principles of interest theory and financial mathematics. Students will explore the time value of money, various types of annuities, bond and stock valuation, loan amortization, and yield rates, using both theoretical models and practical applications. The course emphasizes a solid understanding of deterministic models as well as introduces stochastic approaches to interest rate behavior. Students will also gain familiarity with financial instruments and their sensitivities, term structures, and the use of the Texas Instruments BA II Plus financial calculator for real-world computations.
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 3552	Topology	3	This course that provides a comprehensive coverage of both general topology and algebraic topology.The course is designed to equip students with a solid foundation in fundamental topological concepts and techniques,as well as their applications.Topics covered include set theory,logic,topological spaces,continuous functions,connectedness,compactness,countability and separation axioms in general topology.In algebraic topology,the course explores the fundamental group,separation theorems,the Seifert-van Kampen theorem,classification of surfaces,classification of covering spaces,and applications to group theory.
MATH 3820	Real Analysis	3	This course provides a rigorous introduction to the theory of real-valued functions and the foundations of calculus. Topics include sequences and series, limits and continuity, differentiation,the Riemann integral,sequences and series of functions,generalized integration, and an introduction to topology and metric spaces.
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 3941	Ordinary Differential Equations	3	This course provides an introductory exploration of ordinary differential equations (ODEs) and their underlying principles and techniques. It covers various aspects of linear ordinary differential equations, including the concepts of existence and uniqueness, power series solutions, Laplace transforms, Bessel functions, Legendre polynomials, Hermite polynomials and eigenvalue problems. Moreover, the course delves into additional topics and practical applications, allowing students to apply ODEs to real-world scenarios. By the end of the course, students will have acquired a solid understanding of ODE theory, enhanced their problem-solving abilities, and gained insight into interdisciplinary applications.
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.
MATH 4270	Differential Geometry	4	This course introduces the fundamental concepts of differential geometry,focusing on the geometry of curves and surfaces in Euclidean spaces and the intrinsic geometry of differentiable manifolds. Topics include axiomatic and Cartesian models of Euclidean geometry,curve theory,classical surface theory,Riemannian geometry,curvature,geodesics,and major connections between geometry,topology,and analysis such as the Gauss –Bonnet theorem and divergence theorem.
MATH 4525	Survey Sampling	3	This course focusing 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 require 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.

MATH 4900	Modern Methods for Scientific Computing	4	This course provides a comprehensive introduction to numerical methods used to solve mathematical problems arising in science and engineering. Topics include computational linear algebra, numerical solutions of linear and nonlinear equations, interpolation, numerical differentiation and integration, numerical solution of ordinary and partial differential equations, finite element methods, and stochastic simulation methods such as Monte Carlo. Emphasis is placed on algorithm design, analysis of accuracy and stability, conditioning, error estimation, and efficient computer implementation. Students gain hands-on experience with numerical software through assignments and projects.
MATH 5525	Optimization in Operations Research	4	Optimization in Operations Research introduces students to the fundamental models and methods used to make the best possible decisions in complex systems.Students study key topics including linear programming, simplex and interior-point methods, duality and sensitivity analysis, network and dynamic programming, integer and discrete optimization, and nonlinear optimization. The course also covers heuristic and metaheuristic methods for solving large or difficult problems where exact solutions are not practical.
MGMT 3750	Cross-Border Supply Chain Management	3	The Cross-Border Supply Chain Management course is designed to equip students with the knowledge and skills necessary to navigate the complexities of international trade and formulate cost-effective strategies for the movement of goods and services across international borders. This course places a strong emphasis on understanding and addressing regulatory and documentation requirements inherent in global supply chain operations.
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.
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 1500	The Meaning of Life	4	What makes life meaningful? Is meaning something we create or something we discover? Thiscourse examines enduring human questions about happiness, love, suffering, freedom, andmortality. Through readings in philosophy, literature, and film, students explore classical andmodern attempts to make sense of existence. The class emphasizes discussion, reflection, andpersonal engagement with ideas that shape our sense of purpose and value.
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 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 1536	Introductory Mechanics	4	This course provides an introduction to the fundamental concepts of mechanics, covering the dynamics of particles and rigid bodies using vectors and calculus. Students will explore topics such as conservation of energy and momentum, as well as kinetic theory. These concepts serve as the cornerstone for understanding various principles in the physical sciences and engineering disciplines.
PHYS 1552	Physics for Life Sciences II	4	Physics for Life Sciences II is a continuation of the introductory Physics for Life Sciences I course, designed specifically for students pursuing studies in the life sciences. This course provides a comprehensive introduction to the principles of electricity and magnetism. It covers the fundamental concepts, laws, and applications of electromagnetism. Students will explore electric fields, magnetic fields, electromagnetic waves, and their interactions with matter. The course includes both theoretical foundations and practical applications, with a focus on developing problem-solving skills.
PHYS 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.
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 3367	Mathematical Methods For Physics	4	PHYS 3367 is designed to provide students with a solid foundation in the mathematical tools essential for studying physics. Topics covered include ordinary and partial differential equations, complex analysis, vector calculus, linear algebra, special functions, integral transforms, and numerical methods. This course aims to equip students with the mathematical skills as well as computational methods necessary for advanced physics research and coursework.
PHYS 4112	Statistical Thermodynamics and Statistical Mechanics	4	This course provides a rigorous foundation in the principles and methods of statistical thermodynamics and statistical mechanics, linking the microscopic behavior of atoms and molecules to macroscopic thermodynamic observables. Emphasis is placed on both classical and quantum systems, the development of ensemble theory, and the applications of probability in describing equilibrium and non-equilibrium phenomena. Topics include the laws of thermodynamics, entropy and information theory, partition functions, quantum statistics, and phase transitions. The course integrates theoretical formulation with selected applications in condensed matter, astrophysics, and molecular systems.
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.
POLI 1300	Introduction to International Relations	3	This course provides a comprehensive overview of the key theories, actors, and issues shaping global politics. It examines the historical evolution of the modern international system—from the rise of the state system to the transformations following the Cold War—and explores how globalization and shifting power dynamics influence contemporary world order. Students are introduced to major theoretical approaches, including realism, liberal internationalism, Marxism, constructivism, and critical perspectives such as feminist, postcolonial, and decolonial theories. The course also analyzes core topics such as international security, global political economy, international law, environmental challenges, migration, and human rights, equipping students with the analytical tools needed to understand and evaluate complex international phenomena.
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 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 2095	Social Psychology	3	The course examines how people interact with each other and their social environment. Students will gain an understanding of how social factors shape behavior, thoughts, and emotions, as well as how individuals influence and are influenced by their social context. The course covers a range of topics including social perception, attitudes, behavior, group process, interpersonal relationship and language communication. By the end of the course, students should have a strong grasp of the major principles and theories of social psychology and be able to critically evaluate research in the field.
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.
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.
PSYC 4600	Human Sexuality	3	Human sexuality is a multifaceted and interdisciplinary field that examines the biological, psychological, cultural, and social dimensions of sexual behavior and identity. The course explores human sexual development, gender identity, sexual orientation, reproductive health, communication, and ethics. Drawing on perspectives from biology, psychology, sociology, and public health, students will engage critically with topics such as the sexual response cycle, contraception, sexually transmitted infections, sexual functioning, and the diversity of sexual experiences and expressions across cultures and throughout the lifespan.
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 2130	Sustainable Systems	3	This course introduces the concept of sustainable systems and explores a systems-based approach to sustainability. It covers the analysis and design of sustainable agricultural, food, environmental, energy, water, and societal systems. Students will learn how to create products, systems, and services that are socially, environmentally, and economically sustainable. The course emphasizes a multidisciplinary perspective, integrating insights from climate change, materials science, energy, and water management. The goal is to equip students with the knowledge and tools needed to address global sustainability challenges by fostering innovation in sustainable practices.
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 2114	Introductory Data Science	3	This survey course serves as a comprehensive introduction to the fundamental principles and techniques in the field of data science. Designed for students with diverse backgrounds, the course covers key elements essential to understanding and working with data, including data collection, management, curation, and cleaning. Students will gain proficiency in summarizing and visualizing data, allowing them to derive meaningful insights and communicate findings effectively.

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 technique 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 3055	Introduction to R for Data Science	3	This course introduces students to the fundamental concepts in data science, covering the entire data science workflow, various aspects of statistical and machine learning techniques. It explores the R programming language and R packages for data manipulation, visualization, and modeling. Through hands-on laboratory sessions, students will engage in practical exercises, turning raw data into meaningful insights, knowledge, and understanding, and effectively communicating analytical results using R, RStudio and R Markdown.
STAT 3200	Statistical Methods for Data Science	3	The course provides an introduction to statistical methods commonly used in the experimentalsciences 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.
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 3560	Statistical Computing	3	This course serves as an introduction to statistical computing utilizing the R programming language. The primary focus is on statistical programming, graphical representation, elementary Monte Carlo methods, simulation studies, and basic optimization techniques in R. Students will explore classic methods such as the bootstrap and delve into modern Bayesian inference. By the end of the course, students will have a comprehensive understanding of R and its capabilities, along with a basic proficiency in key computational methods in statistics, including optimization, numerical analysis, Markov Chain Monte Carlo (MCMC) techniques, and simulation 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.