UNDERGRADUATE COURSE DESCRIPTIONS

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Accounting (ACCT)

ACCT 201 **Principles of Financial Accounting** **(3)**

This course provides a comprehensive introduction to Financial Accounting. Students will learn about the accounting cycle, including the recording, summarizing, and reporting of financial transactions. Key topics covered include cash management, receivables, inventory valuation, long-term assets, and liabilities. The course also delves into corporate accounting, focusing on the financial statements of corporations. By the end of the course, students will have a solid foundation in financial accounting principles and practices. Prerequisite: MATH 103, 110, 201, or BUS 109.

ACCT 205 **Managerial Accounting** **(3)**

The course introduces students to the critical role of accounting in managerial processes such as planning, controlling, and decision-making. Key topics include cost concepts and classifications, job-order costing, process costing, variable costing, and activity- based costing. Students will also explore cost-volume-profit analysis, budgeting, and making short-term decisions. By the end of the course, students will understand how to apply accounting information to support managerial decisions and improve organizational performance. Prerequisite: MATH 103 and ACCT 201.

ACCT 301 **Intermediate Accounting I** **(3)**

The course provides an in-depth analysis of financial accounting at an intermediate level. Students will delve into accounting standards and theory, the conceptual framework of financial reporting, and the accounting information system. Key topics include the elements of the statement of financial position, the statement of cash flows, and the statement of comprehensive income. The course also covers cash, receivables, inventory, departures from historic cost, operational assets, long-term assets, revaluation surplus, and impairment. By the end of the course, students will have a solid understanding of intermediate financial accounting principles and practices. Prerequisite: ACCT 201.

ACCT 305 **Intermediate Accounting II** **(3)**

The course build on the applications, standards, and practices introduced in ACCT 301, offering an advanced analysis of financial accounting with a focus on liabilities and owners' equity. Students will explore key topics such as revenue recognition, accounting for investments, and preparing the statement of cash flows. The course also covers accounting for intangible assets, current liabilities, contingencies, provisions bonds, long-term notes, and leases. Additionally, students will delve into shareholders' equity, including contributed capital, retained earnings, dividends, and earnings per share. Finally, the course covers the statement of Cash flows. By the end of the course, students will have a comprehensive understanding of intermediate financial accounting principles and practices. Concurrent enrollment in ACCT 301.

ACCT 334 **Accounting for Tax** **(3)**

ACCT 334 provides a comprehensive understanding for taxation principles, integrating both U.S. and GCC systems. The course covers recent amendments to the IRS code, focusing on individual and corporate taxation topics, including taxable income, exclusions, deductions, retirement accounts, capital gains, tax credits, self-employment tax, and U.S. corporate tax. Furthermore, the course explores GCC VAT systems, including taxable and deemed supplies, VAT rates, exempt supplies, registration processes, tax groups, reverse charge mechanism, and the capital asset scheme. The course highlights BEPS 2.0, emphasizing the OECD's Pillar Two framework, which introduces global minimum tax and has been recently implemented in Kuwait, as well as Kuwait's proposed Business Profit Tax (BPT) and other anticipated charges. Students will develop practical skills in tax compliance and filing, equipping them to navigate the evolving global and regional tax landscape, including Kuwait's new tax reforms. Prerequisite: ACCT 201.

ACCT 365 **Financial Statement Analysis** **(3)**

This course is designed to equip students with the knowledge and skills needed to use financial statements for firm valuation in

various capital markets contexts. Students will learn different valuation tools to evaluate a firm's accounting and financial performance, understand the concept of earnings quality, and address other valuation-related issues. Key topic include financial ratio analysis, cash flow analysis, and the assessment of financial health and performance. By the end of the course, students will be proficient in analyzing financial statements to make informed investment and business decisions. Prerequisite: ACCT 301 and FINC 232.

ACCT 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ACCT 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

A research and writing project to be determined in consultation with the Instructor. Can be repeated for credit with a different topic. Junior standing. Prerequisite: ACCT 201.

ACCT 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

ACCT 401 ***Advanced Managerial Accounting*** ***(3)***

The course addresses advanced issues in cost management and its application to achieve organizational goals. Students will explore the relationship between performance measurement, compensation, and authority within the context of organizational structure. Key topics include cost control, strategic cost management, and the use of accounting information for decision-making. The course also examines organizational development and success, focusing on how managerial accounting practices can drive performance and efficiency. By the end of the course, students will have deep understanding of advanced managerial accounting concepts and their practical applications. Prerequisite: ACCT 205

ACCT 405 ***Advanced Financial Accounting*** ***(3)***

This course builds on the knowledge and skills developed in earlier Financial Accounting courses, equipping students with the advanced cognitive and technical abilities required to address complex accounting issues. Students will delve into advanced topics such as business combinations, equity method, valuation of assets and liabilities, consolidation techniques, foreign currency transactions, and the accounting treatment of financial instruments. The course emphasizes the preparation of consolidated financial statements and working papers, focusing on eliminating entries, intercompany transaction, and related adjustments. By the end of the course, students will be prepared to solve advanced accounting challenges and contribute effectively to the field. Prerequisite: ACCT 301.

ACCT 410 ***Auditing*** ***(3)***

ACCT 410 is designed to provide in great depth and detail understanding of generally accepted auditing standards and procedures followed in the examination of financial statements and operating control reviews. Topics include evaluation and analysis of internal control and control risk, nature of and procedures for gathering audit evidence, audit planning and audit program, analytical procedures, fraud auditing, audit sampling for tests of controls and substantive test of transactions, and audit sampling for tests of details of balances. Prerequisite: ACCT 305.

ACCT 413 ***Accounting Capstone*** ***(3)***

This capstone course integrates advanced accounting concepts and practices to prepare students for the CPA exam. It covers financial accounting, auditing, and business environment and concepts, emphasizing critical thinking, ethical behavior, and professional responsibilities. Prerequisite: ACCT 301.

ACCT 421 ***International Financial Reporting Standards*** ***(3)***

This course provides an in-depth exploration of International Financial Reporting Standards (IFRS) and Kuwait's generally accepted accounting standards, focusing on financial reporting requirements for global capital markets. The course emphasizes advanced topics such as fair value measurement, income tax accounting, share-based payments, leases, financial instruments, revenue recognition, and segment reporting. Students will also examine the disclosure of interests in other entities and investments in associates. Additionally, the course enhances students' understanding of the institutional and practical differences in accounting practices across international contexts. By the end of the course, students will gain advanced knowledge and practical skills necessary for global financial reporting. Prerequisite: ACCT 301.

ACCT 470 ***Internship in Accounting*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of Accounting and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

American Studies (AMST)

AMST 121 ***US History since 1900*** ***(3) [G], [S]***

Examination of the major political and economic themes in the US from 1900 to the present. Topics will include the world wars, prohibition and the Depression, the rise of the US as a global power, the Cold War, and the Gulf War.

AMST 220 ***Early American Political History*** ***(3) [G], [S]***

The course traces the political history of America from the period of European colonial settlement through the Gilded Age. Topics include colonialism, independence, the US Constitution, Jacksonian Democracy, the Civil War and Reconstruction, westward expansion, and modernization. Prerequisite: ENGL 101.

AMST 333 ***American Culture*** ***(3) [S]***

An interdisciplinary study of America's view of itself: contemporary society including race, ethnicity, politics, literature and film; issues of violence, discrimination, racism, and attitudes that shape contemporary American culture. Sophomore standing or permission of instructor.

AMST 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

AMST 388 ***Independent Study*** ***(1 - 3) [Z]***

A research and writing project to be determined in consultation with the instructor. Can be repeated for credit with a different topic. Senior standing and permission of instructor.

AMST 389 ***Special Topics*** ***(1 - 3)***

Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: any 100 or 200-level HIST course, or AMST course. Pre-requisite: IR 101.

AMST 402 ***American Social History in the 20th Century*** ***(3)***

The economic boom and the conservative/traditional 50s; the Civil Rights movement; the anti-war movement; the feminist movement; the counter-culture movement; the student movement; the response of the political right; the information revolution; transformation of the culture and the political landscape. Prerequisite: IR 202.

AMST 409 ***American Foreign Policy since WWII*** ***(3)***

Investigation of American foreign policy since World War II: the process of decision making, the role of the Presidency, the State Department and Pentagon bureaucracy, the Congress, and Public Opinion. Focuses on the Cold War and the Middle East. Prerequisite: IR 202.

Arabic Language & Literature (ARAB)

ARAB 101 ***Arabic as a Second Language I*** ***(3) [A], [I]***

This course introduces the student to the Arabic alphabet, the script of modern written Arabic, and develops the student's knowledge in the four language skill areas. The materials are designed in the effective modern approach to foreign language teaching. This course is taught in the Arabic language. Prerequisite: Arabic placement exam score less than or equal to 4.

ARAB 114 ***Arabic Basic Language Skills*** ***(3) [A], [I]***

This course introduces students to basic Arabic language skills: listening, speaking, reading, and writing. This course is taught in the Arabic language. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: Arabic placement exam score between 5 and 14.

ARAB 150 ***Human Development in the Arab World*** ***(3) [H], [K]***

This course examines Human Development in the Arab World using the Reports of the UN Development Program and The Arab Fund for Economic and Social Development, which were released in 2003/2004. It provides students with detailed description and critical evaluation of the economic, demographic, social, and political conditions in the Arab countries. This course is taught in the English language. Prerequisite: ENGL 101.

ARAB 201 ***Arabic as a Second Language II*** ***(3) [A], [I]***

This course extends ARAB 101 and is designed to enhance further the non-native speaker's knowledge and proficiency of Arabic. This course is taught in the Arabic language. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: ARAB 101.

ARAB 205 ***Survey of Arab-Islamic Civilization*** ***(3) [H], [K]***

The course acquaints students with the past influence and present importance of Arab-Islamic civilization. It investigates how Islam has shaped many different cultures in Asia, Europe, and Africa over the last 1400 years. The religious, political, and cultural values associated with Arab-Islamic culture will be discussed. Furthermore, students will be familiarized with the historical forces that shaped the past, and what these forces mean for the world today. This course is taught in the English language. This course satisfies the General Education Requirement for Arab Culture. Prerequisite: ENGL 101.

ARAB 215 ***Arabic Composition I*** ***(3) [I], [X]***

This course introduces native speakers of Arabic – with English curricula education – to intermediate reading and writing skills in Arabic. Using various literary and non-literary styles, students will be exposed to functional grammar, sentence structure, and paragraph writing. This course is taught in the Arabic language. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: Arabic placement exam score 15 or higher.

ARAB 220 ***Readings in Arabic Heritage*** ***(3) [H], [I]***

This course surveys selections of writings from classical Arabic works. The main aim of the selections is to reflect the intellectual, literary, and cultural developments of the Arabs from pre-Islamic times up to the present day. The course is thematically organized to allow students the opportunity to study the continuity or changes of certain values and beliefs in Arabic culture. This course is taught in the Arabic language. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: Arabic placement exam score 25 or

higher.

ARAB 221 ***Creative Writing*** ***(3) [H], [I]***

This course introduces students to the skills of writing the genre of the short story and novel. This course is taught in the Arabic language.

ARAB 301 ***Arabic as a Second Language III*** ***(3) [A], [I]***

This course builds on the earlier Arabic courses for non-native speakers. It uses more advanced materials to strengthen the reading, writing, listening, and speaking abilities of the student. This course is taught in the Arabic language. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: ARAB 201.

ARAB 303 ***Literature of the Arabian Gulf*** ***(3) [H], [K]***

This course looks at the contribution of literary figures from the Arabian Gulf, especially those of Kuwait, to Arabic literature in general. This course is taught in the Arabic language. This course satisfies the General Education Requirement for Arabic Culture. Sophomore standing or permission of instructor.

ARAB 304 ***Arabic Drama*** ***(3) [H], [K]***

The course looks at the emergence of Arabic drama in the 19th century until the present day, and assesses prototype drama forms of the medieval period. Through a study of selected plays by prominent authors, a picture will emerge as the influence of Arabic drama on Arabic literature. A selection of video recordings will also accompany the course. This course is taught in the Arabic language. This course satisfies the General Education Requirement for Arabic Culture. Sophomore standing or permission of instructor.

ARAB 308 ***Arab Women in History*** ***(3) [H]***

An exploration of the diversity of voices of Arab women, both past and present, from a multidisciplinary perspective. Topics include women as revolutionaries and nationalists, male-female relations, women in the workforce, female circumcision, family structures, and lifestyles. This course is taught in the Arabic language. Sophomore standing or permission of instructor.

ARAB 310 ***Classical Arabic Prose*** ***(3) [H], [K]***

This course surveys Classical Arabic prose. The main aim of the selections is to introduce a few of the outstanding literary achievements of the Arabs in prose from the 8th to the 14th centuries. Readings will include works by Ibn al-Muqaffa', al-Jahiz, Ikhwan al-Safa', Badi' al-Zaman al-Hamadhani, and others. This course is taught in the Arabic language. Sophomore standing. Prerequisite: ARAB 220.

ARAB 312 ***Modern Arabic Literature*** ***(3) [H], [K]***

This course surveys modern and postmodern Arabic creative writing: novel, short story, drama, poetry, and literary criticism. Themes in this course include, but are not limited to, love, death, exile, social pressures, and political concerns. The course demonstrates the nexus between Arabic literary production and contemporary challenges of Arab life. This course is taught in the Arabic language. This course satisfies the General Education Requirement for Arab Culture. Sophomore standing or permission of instructor. Prerequisite: ARAB 220.

ARAB 313 ***Arab Women and Literature*** ***(3) [H], [K]***

A survey of the history of Arab women's literature, from the medieval period to the present day. Special attention is paid to the questions of literary tradition. This course is taught in the Arabic language. Sophomore standing or permission of instructor.

ARAB 314 ***Classical Arabic Poetry*** ***(3) [H], [K]***

This course focuses on selected masterpieces of classical Arabic poetry. Individual works are studied with an aim to understanding the historical context of their composition and to appreciating their literary value. This course is taught in the Arabic language. This course satisfies the General Education Requirement for Arab Culture. Sophomore standing or permission of instructor. Prerequisite: ARAB 220.

ARAB 315 ***Literature of Al-Andalus*** ***(3) [H], [K]***

A survey of poetry and prose from the nearly eight centuries of Arab-Islamic civilization in Al-Andalus. This course is taught in the Arabic language. This course satisfies the General Education Requirement for Arab Culture. Sophomore standing or permission of instructor. Prerequisite: ARAB 220.

ARAB 316 ***Literature in the Abbasid Era*** ***(3) [H], [K]***

This course involves the study of literature in the Abbasid Era, both early and later ages up to the fall of Baghdad in 1258. Through a literary analysis of poetry and prose of the Abbasid period, some of the historical characteristics of the period, as well as the development of music, cuisine, and the arts will be highlighted. This course is taught in the Arabic language. Sophomore standing. Prerequisite: ARAB 220.

ARAB 318 ***Modern Arabic Novel*** ***(3) [H], [K]***

This course focuses on the development of the Arabic novel, and surveys the main factors that led to the rise of the novel. Students will analyze a number of works by prominent Arab novelists: Naguib Mahfouz, Jamal Ghitani, Tayyib Saleh, Ghada Samman, and Ghassan Kanafani. Exile, post-colonialism, feminine discourse will be among the themes discussed. The readings will be supplemented with critical theory by leading Arab literary critics. This course is taught in the Arabic language. Sophomore standing. Prerequisite: ARAB 220.

ARAB 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ARAB 388 ***Independent Study*** ***(1 - 3) [Z]***

Can be repeated for credit with a different topic. Permission of instructor.

ARAB 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Art (ART)

ART 100 ***Introduction to Creativity*** ***(3) [H], [O]***

This course introduces students to a variety of art media including drawing, painting, collage, and sculpture through studio exercises and/or lectures. It focuses on the mental processes involved in the generation of ideas or concepts necessary to develop a student's ability to imagine and construct, that is, to create.

ART 104 ***Art Appreciation*** ***(3) [H], [O]***

This is an introductory-level class that emphasizes understanding and aesthetic pleasure in the visual arts through the study of styles, materials, terminology, and techniques of the art world, as well as major artists and art movements.

ART 120 ***2-D Design*** ***(3) [H], [O]***

This is an introductory studio course investigating the basic elements and principles of the visual arts in two-dimensional media and form.

ART 121 ***Drawing I*** ***(3) [H], [O]***

A studio course that introduces drawing materials and methods. Students gain an understanding of the techniques of drawing, including perceptions, shading, line weight, and representation drawing.

ART 122 ***3-D Design I*** ***(3) [H], [O]***

This course is a studio course investigating the basic elements and principles of the visual arts in three dimensional media and form.

ART 221 ***Drawing II*** ***(3) [H]***

Drawing II is the second of two fundamental drawing courses. It continues the processes and concepts introduced in Drawing I and introduces interpretive approaches to drawing with a growing emphasis on creativity and content. Prerequisite: ART 121.

ART 240 ***Painting I*** ***(3) [H]***

This course provides a foundation in the practices and materials associated with water-based painting. Working from direct observation as well as expressive and conceptual approaches, students develop an understanding of formal concerns as well as paint manipulation to produce strong representational and/or non-representational painting. Prerequisite: ART 121.

ART 340 ***Painting II*** ***(3) [H]***

This course provides a continuing investigation of the materials, processes, and techniques of water-based painting. Students will develop an expanded vocabulary of paint language and increased skill in rendering volume, space, light, color, and movement in their work based on observation as well as expressive and conceptual approaches. Prerequisite: ART 240.

ART 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ART 388 ***Independent Study*** ***(1 - 3) [Z]***

Can be repeated for credit with a different topic. Permission of instructor.

ART 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor or Junior standing.

Art History (ARTH)

ARTH 101 ***Art History I*** ***(3) [G], [H]***

A chronological survey highlighting the developments in Western Art from the prehistoric to the early Renaissance.

ARTH 102 ***Art History II*** ***(3) [G], [H]***

A chronological survey highlighting the developments in Western Art from the Renaissance to the late 20th C.

ARTH 103 ***Arab and Islamic Art*** ***(3) [G], [H], [K]***

A critical survey of the chronological development of Islamic Art. This course satisfies the General Education Requirement for Arab Culture.

ARTH 201 ***Art and Society*** ***(3) [G], [H]***

Focus on significant artists and artworks in the context of historical periods and requirements of the societies.

ARTH 203 ***Arabic and Islamic Calligraphy*** ***(3) [G], [H], [K]***

This course examines the development and various Arab and Islamic scripts from ancient through modern times.

ARTH 204 ***Art of Africa, Oceania and the Americas*** ***(3) [G], [H]***

An introduction to the visual culture of select regions of Africa, Oceania, and the Americas from ancient through modern times.

ARTH 205 ***Contemporary Art*** ***(3) [G], [H]***

A study and discussion of current art practices around the world.

ARTH 208 ***Asian Art*** ***(3) [G], [H]***

This comparative study focuses on the material and visual cultures of Asia from ancient to modern times. Topics will include architecture, sculpture, painting and functional art from regions such as India, Southeast Asia, China, Japan and Korea.

ARTH 211 ***Cities in Art*** ***(3) [G], [H]***

An examination of various historic cities, with a discussion of their history and evolution, important artworks, landmarks, and buildings.

ARTH 303 ***Arab Design History*** ***[B], [H], [K], [Z]***

This course explores the evolution of Arab graphic design from past to present. It will identify the works and pioneers that contributed to its birth and development. Junior standing.

ARTH 315 ***History of Design*** ***(3) [G], [H]***

This course explores the evolution of graphic design from past to present.

ARTH 389 ***Special Topics*** ***(3)***

Can be repeated for a credit a different topic. Permission of instructor or Junior Standing.

Business Ethics and Law (BEAL)

BEAL 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

BEAL 388 ***Independent Study*** ***(1 - 3)***

Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: MGMT 304.

BEAL 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

BEAL 401 ***Legal & Ethical Issues in Business*** ***(3)*** ***[Z]***

This course examines the impact of legal systems on business. Topics Include: Constitutional law, Contract law principles, Torts, Intellectual Property, legal forms of business entities, business regulation and Negotiable Instruments. Much emphasis will be on Kuwait Law, the Business setting, and ethical decision making. Senior Standing.

BEAL 403 ***Corporate Governance & Ethics*** ***(3)***

This course seeks to generate a critical understanding of corporate governance, including government regulatory compliance, the exploitation of legal and regulatory loopholes, business ethics, social auditing, and corporate social responsibility, and the role of these practices in the profitability and sustainability of business. Senior Standing.

BEAL 407 ***International Business Law*** ***(3)***

A study of international investment law, the law of international trade, currency exchange, and World Trade Organization regulations. Prerequisite: FINC 341.

Biology (BIOL)

BIOL 101 ***General Biology I*** ***(3)*** ***[P]***

Part one of a two-semester course. An in-depth introduction to scientific method, and exploration of study of life from atoms to cellular levels of organization. Emphasis on the cell structure, function, energy and metabolism, genes, evolution and speciation, the origins of life, bacteria, plants, and animals. Concurrent: BIOL 101L.

BIOL 101L ***General Biology I Laboratory*** ***(1)*** ***[P]***

A laboratory component for the General Biology I course. Concurrent: BIOL 101.

BIOL 102 ***General Biology II*** ***(3)*** ***[P]***

Part two of a two-semester course. Emphasis on the organismal and higher levels of biological organization. The plant and animal diversity, plant and animal form and function, body systems, animal behavior, ecology and conservation of biology. A required laboratory is part of the course. Prerequisite: BIOL 101 and BIOL 101L Concurrent: BIOL 102L.

BIOL 102L ***General Biology II Laboratory*** ***(1)*** ***[P]***

A laboratory component for the General Biology II course. Prerequisites: BIOL 101 and BIOL 101L. Concurrent: BIOL 102.

BIOL 103 ***Biology in Everyday Life*** ***(3)*** ***[P]***

An exploration of biological concepts related to everyday life. The student is introduced to the basic principles that govern the biological world. Topics include cell structure and function, energy and metabolism, evolution and diversity of life, plant structure and function, animal anatomy and physiology, and genetics. A required laboratory is part of the course. Concurrent: BIOL 103L.

BIOL 103L ***Biology in Everyday Life Laboratory*** ***(1)*** ***[P]***

A laboratory component for the Biology in Everyday Life course. Concurrent: BIOL 103.

BIOL 105 ***Environmental Science*** ***(3)*** ***[P]***

This introductory course addresses the relationship between human activity and the environment. Emphasis on ecosystems, energy flow and nutrient cycling, population dynamics, resource use and conservation, pollution, management and eradication of pollution, ethics and the environment.

BIOL 200 ***Structure and Function of the Human Body*** ***(3)*** ***[P]***

A course designed to help students understand the biological basis of human health and disease. The course covers the study of cell and molecular biology, physiology, anatomy, reproductive biology, and functions of the human body. Emphasis will be placed on specific topics in human health and disease.

BIOL 220 ***Ecology*** ***(3)*** ***[P]***

An examination of the interactions of living organisms with their physical and biological environments. Special attention will be given to popular dynamics and the interactions among organisms that determine the structure, function, evolutionary development of biological communities, and the ecological role played by man. Prerequisite: BIOL 101 or BIOL 103 or BIOL 105.

BIOL 317 ***Introduction to Neurobiology*** ***(3)*** ***[P]***

A general introduction to basic anatomy and physiology of the brain. Specific topics include neuronal function, synaptic transmission, sensory processing, movement, sleep and wakefulness, hunger, thirst, caloric and body fluid homeostasis, recovery of function after brain damage, and various neurological and psychiatric disorders. Sophomore standing or permission of instructor. Prerequisite: BIOL 101 or BIOL 103.

BIOL 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

BIOL 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

BIOL 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Internship Free Elective BUEC (BUEL)

BUEL 473 ***Internship for Free Elective Business*** ***(1 - 3)***

This is a supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly journals, and final report explaining what the internship added to the student's knowledge in an approved discipline. Senior standing and permission of instructor. Prerequisite: minimum GPA of 2.00.

Business (BUS)

BUS 100 ***Introduction to Business*** ***(3)***

Business 100 provides an overview of business and the role business plays in economic, social, and political environments. It will also provide exposure to the functional areas of business such as management, operations, marketing, and finance. There will be opportunities to discuss current events in business as they apply to the topics being covered.

BUS 109 ***Quantitative Data Literacy*** ***(3)***

The course provides students with quantitative data literacy skills and reinforces the application of mathematical notations to business and economics, and builds on business analytics that focuses on analytical models and tools. Topics include algebraic techniques, applied differential calculus and financial mathematics together with descriptive statistics for univariate and bivariate analysis. A radical shift in technology provides students techniques to apply mathematical tools, conduct statistical analysis, and examine data to extract information and generate insights. The course further aims to enhance students' mathematics knowledge and develop the quantitative methods needed to solve various problems in business and economics. Pre-requisite: MATH 100.

BUS 209 ***Data Analytics I*** ***(3)***

This course introduces students to the foundational concepts and techniques of data analytics for business applications. Emphasizing experiential learning, the curriculum combines theoretical knowledge with practical skills to analyze and interpret data for informed decision-making in business and economics. The course covers key topics including descriptive analyses, numerical measures, estimation and hypothesis testing, analysis of variance (ANOVA), and regression using statistical packages like RStudio, Excel, and Python. Prerequisite: MATH 103 or BUS 109. Concurrent: ENGL 102.

BUS 210 ***Research Methods for Business*** ***(3)***

This course explains and describes the different aspects and stages of conducting business research. It presents the various analytical frameworks and methodological tools used for this purpose with emphasis on empirical approach, data collection, and analysis. Prerequisite: MGMT 201 and STAT 201.

BUS 211 ***Introduction to Statistical Programming for Business*** ***(3)***

This course introduces students to the principles of computer programming with emphasis on data analytical for business applications. The radical shift in data science requires students to obtain skills in data abstraction and algorithms development. Topic include program development, debugging, and testing; data variables; decisions structures and Boolean logic, repetition structures, functions, data structures, and basic input/output operations with files and databases. Hands-on exercises in Python are designed for the course. Pre-requisite: BUS 109.

BUS 309 ***Advanced Data Analytics for Business*** ***(3)***

This course provides an in-depth study of business analytics with a focus on machine learning and artificial intelligence. Students will learn how to use popular software tools such as Python, RStudio, Tableau and Gretl to perform data analysis, visualization, and modeling. Students will also learn how to use machine learning and artificial intelligence techniques to solve business problems, including classification, regression, clustering, and natural language processing. Pre-requisite: BUS 209 and Concurrent: ENGL 102

BUS 310 ***Strategies for Data Governance*** ***(3)***

The course provides students with strategies for developing data governance frameworks and tools in modern organizations. Data governance frameworks assure organizations can sustain data-driven competitive advantage ana mitigate the risk of growth. Topics include data governance program planning, strategy, implementation, operating procedures, and policies. Further, this course discusses the organizational framework for data governance, including the roles and responsibilities of cross-functional departmental projects and processes. Pre-requisite: BUS 209 and Concurrent: ENGL 102.

BUS 321 ***International Business*** ***(3)***

This course examines the principles of international business and management, focusing on globalization drivers and the impact of legal, technological, and political changes in business decisions. Students analyze cultural and ethical frameworks, sustainability principles, and corporate social responsibility strategies. Topics include international trade and investment theory, foreign exchange strategies, collaboration among nations (including regional economic integration), market entry strategies, strategic alliances, and global organizational structures and design. Prerequisite: BUS 201, MRKT 200, ECON 201 and FINC 232.

BUS 389 ***Special Topics in Business and Economics*** ***(3)***

Can be repeated for credit with a different topic. Permission of Instructor.

BUS 409 ***Business Intelligence and Decision Support Systems*** ***(3)***

This course is designated to develop an understanding of large datasets and provides a thorough grounding in the technologies and best practices used in big data machine learning. Being able to store, manage, ana analyze large-scale data has critical impact on business intelligence, scientific discovery, social and environmental challenges. Students will analyze intricate datasets for topics such as market analysis, customer behavior predication, improved operational efficiency, ana business growth and innovations. Students utilize RStudio and Python, among others, to apply modelling techniques that include: Random Forest, Support Vector Machines (SVM), Neural Networks, and Multivariate Time Series Analysis. Pre-requisite: BUS 309.

BUS 489 ***Interdisciplinary Honors Seminar*** ***(3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of Instructor.

BUS 490 ***Business Administration Capstone*** ***(3)***

This course provides an integrative learning experience, synthesizing and applying content from the BBA program to examine the dynamics of the global business environment. Through case studies, simulations, and discussion forums, students assess organizations within internal, external, and institutional contexts. Emphasizing ethical standards, corporate social responsibility, and sustainability, the course identifies opportunities and anticipates global changes. A focus on key success factors in business is enriched by seminars featuring successful local entrepreneurs and global role models. Collaborative multi-player simulations refine decision-making skills and provide shared experiences in tackling competitive business challenges.

Chemistry (CHEM)

CHEM 101 ***General Chemistry I*** ***(3)*** ***[P]***

This introductory course covers the fundamental chemical principles, concepts, and laws. Topics include chemical reactions, stoichiometry, gas laws, kinetic theory of gases, thermochemistry, atomic structure and periodicity, the Bohr model, Lewis structures, ionic and covalent bonding, the solid state and crystallography, the liquid state and phase diagrams. Con-current: CHEM 101L and MATH 201.

CHEM 101L ***General Chemistry Laboratory*** ***(1)*** ***[P]***

A laboratory component for the General Chemistry I course. Con-current: CHEM 101

CHEM 102 ***General Chemistry II*** ***(3)*** ***[P]***

Continuation of General Chemistry I. Covers properties of solutions, oxidation-reduction reactions, colligative and chemical properties, acid base and complex ion equilibria, laws of thermodynamics, enthalpy and free energy, electrochemistry, representative elements, transition metals, and nuclear chemistry. Con-current: CHEM 102L. Prerequisite: CHEM 101 and CHEM 101L.

CHEM 102L ***General Chemistry II Laboratory*** ***(1)*** ***[P]***

A laboratory component for General Chemistry II course. Con-current: CHEM 102.

CHEM 103 ***Chemistry in Everyday Life*** ***(3)*** ***[P]***

An introduction to the principles of chemistry and its role in our daily life. A number of topics will be addressed such as nuclear chemistry and the atomic bomb, acids and bases, petroleum, chemistry in the kitchen, food additives and coloring,

perfumes, soaps and detergents, toxins and poisons, medicine and drugs, forensic chemistry and DNA fingerprinting, global warming, acid rain, air and water pollution. A required laboratory is part of the course. Con-current: CHEM 103L

CHEM 103L ***Chemsitry in Everyday Life Laboratory*** ***(1)*** ***[P]***

A laboratory component for the Chemistry in Everyday Life course. Con-current: CHEM 103

CHEM 104 ***Living in a Chemical World*** ***(3)*** ***[P]***

A one semester survey of modern concepts of the structure and properties of the material universe and their inter conversions for students who do not need a more rigorous foundation in chemistry for degree completion. As the chemistry is introduced, related ecological, geopolitical, and socioeconomic concerns are discussed. Introductory topics in chemistry are covered from a largely conceptual point of view. Atomic theory, the gas laws, covalent/ionic bonding, hydrogen bonding, organic chemistry, nuclear chemistry, oxidation/reduction reactions, dimensional analysis, isotopes, and water properties are all introduced in this course. This course meets a three credit hour science requirement for non-science majors. Prerequisite: ENGL 101.

CHEM 105 ***The Forensic Chemistry of CSI*** ***(3)*** ***[P]***

A one course designed for students who would like to learn about forensic chemistry and the basic science needed to understand it. Chemical concepts, on the level of an introductory chemistry course and their applications to forensic science will be explored in detail. Topics will include the forensic analysis of drugs, fibers, glass, fingerprints, arson, questioned documents and other types of physical evidence. Other topics will include how forensic science is portrayed in novels, movies, computer games and TV and the methods used in forensic evidence collection at a crime scene. This course meets a three credit hour science requirement for non-science majors. Pre-requisite: ENGL 100.

CHEM 305 ***Environmental Chemistry*** ***(3)*** ***[P]***

In this course students will use fundamental principles of chemistry to gain an understanding of the environment and to acquire an understanding of the pollutants in the environment. Environmental issues that will be discussed include anthropogenic climate change, air pollution, stratospheric ozone depletion, pollution of water sources, and acid rain. Prerequisite: CHEM 103 or CHEM 101.

CHEM 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

Communication Studies (COMM)

COMM 100 ***Media Literacy*** ***(3)***

This course encourages students to use their critical thinking to analyze and evaluate media in various forms through a focus on media production, messages and delivery, media industries, and professions. Prerequisite: ENGL 100 or ENGL 101.

COMM 101 ***Introduction to Mass Communication*** ***(3)*** ***[H], [X]***

Examines the issues and concepts involved in the initial study of the mass media, (i.e., television, radio, newspapers, magazines and interactive outlets) and how they impact the individual and society.

COMM 110 ***Introduction to Digital Media Design*** ***(3)***

This course introduces students to fundamental principles and applications of design, emphasizing critical and cultural awareness of design issues and developing of technical skills. The notion of creative problem solving is particularly emphasized. Students develop expertise in major industry standard software packages. This course lays the foundation for further study of design. A lab fee may be required. [Cross-listed with GDES 110]

COMM 111 ***Images in Media*** ***(3) [H], [O]***

The power of images in media is examined through milestones including those in photography, film, video, and interactive media.

COMM 200 ***Social Media Principles & Practices*** ***(3)***

This course provides students a broad overview of the fundamental concepts and best practices in emerging media communication. Case studies relating to specific social media platforms will be examined to better understand how they are used, their impact on society, culture, businesses and the individual, as well as some ethical and legal implications of their use and/or misuse. Prerequisite: COMM 101

COMM 206 ***Media Writing*** ***(3)***

This course is intended to provide students with fundamental writing techniques used in the media industry. Particular attention will be paid to the development of objective writing skills used across print, broadcast and online platforms. Writing methodologies to produce advertising, broadcast, social media, and journalistic copy will also be studied. Prerequisite: COMM 101

COMM 208 ***Film Production I*** ***(3)***

Introduces students to basics of cinematic storytelling through narrative genres and documentaries. Examines the basics of script-writing, directing, cinematography, and editing. Develops skills in all areas of the craft, and explores both the creative and the technical aspects of production. Includes a short project. Familiarizes students with the nature of filmmaking through lectures and working experiments with traditional narrative filmmaking, documentary, and new media. [Cross-listed with GDES 208]

COMM 211 ***Theories and Research Methods in Communication*** ***(3)***

This course explores foundational and contemporary theories in media and communication studies. Students will evaluate theories related to media production, dissemination, and consumption, gaining insights into how media influences societies, identities, and power dynamics. By the end, students will be equipped to critically assess media content and research. Prerequisite: COMM 101

COMM 219 ***Introduction to A/V Production*** ***(3)***

Exploring all aspects of Audio/Video production covering wide array of equipment, software, skills and techniques necessary for the creation of digital A/V media. A hands-on experience using advanced technologies and industry tools leading to high quality digital media content for audio, video, and motion picture. Prerequisite: COMM 100 or COMM 101

COMM 222 ***Global Media and Spaces of Identity*** ***(3)*** ***[S]***

Anthropology of media is an essential area of study, living as we do, in a media saturated world today. The course examines new paradigms in the anthropology of visual communication in looking at how media interacts with issues such as representation, people's sense of self-identity and collective cultural identities, nationalism and transnationalism, media activism, diasporas, and social engagements with technology. The course locates the anthropological voice in media by locating it in worlds of practice and debate. [Cross-listed with SBSA 222]

COMM 229 ***Studio Production*** ***(3)***

This course provides a hands-on learning experience focused on developing technical skills in audiovisual production. Through workshops and practical assignments, students will engage in video editing, sound design, cinematography, lighting, and post-production. Immersive, real-world scenarios and guided projects enable students to refine their skills collaboratively, preparing them for professional roles in the dynamic audiovisual industry. Prerequisites: COMM 100 and COMM 209

COMM 230 ***Principles of Advertising*** ***(3) [H], [X]***

Provides students with an analysis of commercial advertising from a global perspective with attention to communication theory. Students will examine the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur. Issues of Internet advertising and e-commerce will be explored. Prerequisite: COMM 101.

COMM 240 ***Principles of Public Relations*** ***(3) [H], [X]***

Surveys the fundamentals and techniques involved in public relations operations, including the history, philosophy and ethics of the practice and functions of management, planning, research and communication. It explores the theoretical and practical applications of public relations in contemporary society. Prerequisite: COMM 101.

COMM 249 ***Images of Women in Media*** ***(3) [S]***

In examining links between gender, media and modernity, this course offers examples of media representations of women's identity. Students will not simply analyze media representations of women, but learn to contextualize and critically examine them within a broader framework of the characteristics of contemporary culture in specific regions. This course will 'cross borders' of disciplines, methods and approaches, and intervene into current debates in the fields of cultural anthropology, media and cultural studies, global-local, Eurocentrism, and multiculturalism. [Cross-listed with SBSA 249]

COMM 265 ***South Asian Film: A Global Perspective*** ***(3) [S]***

The Indian film industry is the largest in the world, of which Hindi films is its most popular component. This course uses popular Hindi films as anthropological texts through which we consider broader questions about the anthropology of representations in examining roles and representations of feminity and masculinity, tradition and modernity, the importance of family and family values, the Indian diaspora, and the Hindi film phenomenon as it develops in the age of globalization. In this course, we treat "visual representation as an aspect of material culture and practice of social scientists, as well as culture researched by social scientists." [Cross-listed with SBSA 265]

COMM 309 ***Film Production II*** ***(3)***

The course emphasizes the artistic film movement, the role of the American cinema, and its mark on the world. Explores the old and the new Hollywood and the relationships between aesthetics and expenses. Students will explore the Preproduction, the Production, and the Postproduction phases of filmmaking. Sophomore standing or permission of instructor. Prerequisite: COMM 208 or GDES 208.

COMM 310 ***Broadcast Journalism*** ***(3)***

Introduces students to the principles of broadcast journalism as it occurs in radio and TV. The course includes discussions of technical, ethical, and legal issues affecting broadcast news, as well as lab/studio practice in writing, editing, producing, and reporting broadcast stories. Sophomore standing.

COMM 311 ***Res. Methods in Media & Comm*** ***(3)***

This course equips students with essential research skills in media and communication studies, focusing on both qualitative and quantitative methodologies. Emphasizing ethical practices, it prepares students to critically analyze and apply research findings for study and professional applications. Prerequisite: COMM 211

COMM 312 ***News Reporting and Editing*** ***(3) [H]***

Explores and practices the skills of a working journalist. Students will build on what is being taught in COMM 206 and apply that knowledge to this class. Emphasis will be on the reporting, writing, and the editing of features, hard news stories, broadcast copy, and writing for the Web. There will also be a focus on practical and professional-based skills such as reporting beats and newsroom procedures. Sophomore standing. Prerequisite: COMM 206.

COMM 313 ***Documentary Production*** *(3)*

Introduces students to the concepts of creating a documentary. Emphasis on the practice of documentary production through creation of short or/and semester long productions. Interviewing, shooting, lighting, framing, and various narrative techniques are explored. Prerequisite: COMM 201 or COMM 208.

COMM 319 ***The Art of Film and Video Editing*** *(3)*

Editing history, theory, and current nonlinear techniques and practices are combined to create meaning and significance of the moving image. The course is based on the nonlinear editing software for film and video. Prerequisite: COMM 209.

COMM 320 ***Media Law & Ethics*** *(3)*

This course examines legal and ethical frameworks governing media practice in Kuwait and the broader global landscape. Students will explore press freedom, media regulations, digital rights, professional ethics, and responsibilities of media practitioners within the context of ethical principles, international standards, and Kuwait's legal system. Sophomore standing or permission of instructor. Prerequisite: COMM 101.

COMM 325 ***Mass Communication and Society*** *(3)* *[H]*

Provides students with an overview of the effect of media on culture and society. The course explores how media reflect and mold culture. It examines the role the media play in creating the global village. It also examines how the audience uses and is used by various media outlets and how that use affects the perception of various cultures. Sophomore standing. Prerequisite: COMM 101.

COMM 329 ***Time-Based Visual Storytelling*** *(3)*

Applying essential media narrative tools to create powerful and compelling visual stories impacting audience minds. Emphasis is on creative media skill set, strategies, and applications for making influential and persuasive time-based visual stories for different platforms. Prerequisite: COMM 209.

COMM 330 ***Copywriting for PR And Advertising*** *(3)*

The Copywriting, PR, and Advertising course teaches students how to create persuasive copy, develop public relations strategies, and craft effective advertising campaigns. Through hands-on projects, students will learn to target audiences, tell compelling stories, and communicate brand messages across various media platforms, preparing them for careers in the marketing and communications industry. Prerequisite: COMM 206

COMM 338 ***Copywriting for Advertising*** *(3)*

Explores issues, strategies, theories, and practices in writing and editing advertising messages. Teaches the technical aspects of advertising: writing advertising copy and designing effective layouts. Students use their software design skills. Sophomore standing or permission of instructor. Prerequisite: COMM 230.

COMM 350 ***Organizational Communication and Leadership*** *(3)*

Teaches students the role of communication in creating a productive organizational environment in terms of interpersonal and group behavior. Reviews the theory and practice of team building, conflict resolution and problem solving and explores how communication and organizational cultures relate to each other. Sophomore standing or permission of instructor. Prerequisite: COMM 101 or MGMT 201. [Cross-listed with MGMT 350]

COMM 360 ***Public Relations Writing*** *(3)*

Introduces the student to the essentials of how to prepare and present written material for use in the practice of public relations. It teaches the student the techniques needed for creating effective written communication at a standard generally expected of

persons entering into the practice of public relations. Sophomore standing or permission of instructor. Prerequisite: COMM 240.

COMM 366 ***Popular Culture in South Asia: Film*** ***(3)*** ***[S]***

In this course, popular culture is examined- ranging from calendar art, romance fiction, magazines, photographs, music, food, fashion, films and television - as an important resource for anthropological insights into contemporary social issues and processes. Issues such as continuity and transformation of tradition, the impact of imperialism, and the 'Indianization' of English are increasingly seen as areas of debate and research. Notions of hybridity, diversity, and globalization are addressed. [Cross-listed with SBSA 366]

COMM 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

COMM 370 ***Political Communication*** ***(3)***

This course sits at the intersection of politics and communications as it explores the use of mass media for political purposes. Leaders, throughout the 20th and 21st centuries, have used modern media to shape political behaviors. With an interdisciplinary perspective, the course studies key theoretical and conceptual issues of Mass Communication, and encourage students to critically examine the use of these tools by different regimes.

COMM 373 ***Communications Strategies in International Relations*** ***(3)*** ***[H], [S]***

The course explores how States, and now increasingly also regions, and cities, use public relations tools to advance their soft power, promote business, and project a particular public image. Using case studies from around the world, the course explores not only the tools used, but also evaluate their overall effectives. Prerequisite: IR 202 or Permission of Instructor. [Cross-listed with IR 373].

COMM 380 ***Media Translation*** ***(3)***

The course teaches the various theories and practical skills and techniques of translating, subtitling and dubbing media materials, particularly television programs. The course involves education and training based on TV materials related to Media, Economics, Politics, Law, Business, Literature, Culture, Medicine and Science. Sophomore standing. [Cross-listed with TRAN 380]

COMM 388 ***Independent Study*** ***(1 - 3)***

Can be repeated for credit with a different topic. Permission of instructor.

COMM 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

COMM 390 ***Strategic Communication Campaigns*** ***(3)***

This course teaches students how to design, implement, and evaluate effective communication campaigns across multiple platforms. Emphasizing audience research, message development, and media strategy, the course equips students with practical skills to create integrated campaigns for diverse sectors, while considering ethical and creative challenges. Students will gain hands-on experience in crafting impactful communication strategies to achieve specific goals and measure success. Prerequisites: COMM 230 and COMM 240

COMM 402 ***PR Campaigns*** ***(3)***

This course is designed to help students to think like a Public Relations (PR) professional, knowing the process and timing in executing a PR campaign. The importance of research is underscored through the process of identifying and understanding the target audience which is the very basis of any PR campaign. Students will learn to develop a comprehensive "360 degrees" PR campaign for presentation to prospective clients, and gain a clear in-depth insight into the profession of PR campaigning. Junior Standing.

COMM 419 ***Media Production Capstone*** ***(3)***

This capstone course provides an opportunity for students to synthesize their knowledge, skills and previous projects in digital media to create a comprehensive digital media project and compile a professional portfolio of their accomplishments. Students can work independently or in teams to conceptualize, plan, produce, and present a final project showcasing their expertise and storytelling abilities. Junior standing or Permission of Instructor. Prerequisite: COMM 219 and COMM 319.

COMM 425 ***International Case Studies in Public Relations*** ***(3)*** ***[Z]***

Exposes students to major issues in public relations, with a focus on the characteristics of successful cases in PR. The class lays the theoretical foundation for comparative analysis of public relations practice around the world and then examines national and regional examples. Junior standing.

COMM 427 ***Arab Media and Society*** ***(3) [H], [Z]***

This course examines the complex relationship between media and society in the Arab world, with a particular focus on Kuwait and the Gulf region. Students will analyze traditional and new media platforms, their role in social change, and their impact on cultural identity and expression in Arab societies. Junior standing. Prerequisite: COMM 211

COMM 440 ***Media Planning*** ***(3)***

The course explains media planning, buying, and sales as performed by advertising agencies, clients, and media, as well as public relations practitioners. Students will learn how to evaluate and select various forms of promotional media for various market situations and will also identify their target audience, the media characteristics and all data sources required. Junior Standing or Permission of Instructor. Prerequisites: COMM 230 and COMM 240

COMM 455 ***Advertising Media Planning*** ***(3)***

Examines media planning, buying, and sales as performed by advertising agencies, clients, and media. Students learn how to evaluate and select advertising media for various market situations. Examines target audience, media characteristics and data sources. Junior standing or permission of instructor. Prerequisite: COMM 230.

COMM 460 ***Advertising Campaigns*** ***(3)***

This class builds upon theoretical work on advertising and PR and uses a more practical, hands-on approach throughout the semester. Divided in groups, the class will comprehensively examine all aspects of developing and finally presenting an effective advertising campaign. The practical, group experience is the mainstray of this course. Junior Standing.

COMM 470 ***Internship in Communication*** ***(1 - 3)***

A hands-on learning experience emphasizing the development of skills across various areas of communication and media studies. Students are expected to perform 120 hours of work for academic credit and submit written reports based on their experiences under the guidance of a faculty member. Site supervisors will also provide written assessments of student performance. This is a pass/fail course. Prerequisite: Junior standing and permission of instructor.

COMM 480 ***Seminar in Communication*** ***(3)***

Junior standing and permission of instructor.

Computer Engineering (CPEG)

CPEG 201L ***Matlab Programming Laboratory*** ***(1)***

Matlab and its application for engineering analysis and problem solving. Command Window Operations, 2D plotting, Array Manipulation, Data Handling, Control Structures, Scripting and Function Files, 3D plotting; numerical methods, roots of nonlinear equations, systems of equations, differential equations, etc. Building Graphical User Interfaces. Prerequisite: CSIS 120. Concurrent: MATH 210.

CPEG 210 ***Digital Logic Design*** ***(3)***

Number systems and codes, Boolean algebra, minimization methods, combinational circuit design and analysis, arithmetic blocks, programmable logic, latches and flip-flops, sequential logic design, state machines, registers, counters, memory elements, logic synthesis, high-level synthesis, an introduction to VHDL. A lab component is included in this course. Prerequisite: CSIS 120. Concurrent: CPEG 210L.

CPEG 210L ***Digital Logic Design Laboratory*** ***(1)***

A laboratory component for the course CPEG 210 Digital Logic Design. The lab syllabus is aligned with the course topics. Implementations are done using hardware circuits, software schematic capture and simulation, and hardware description under VHDL.Concurrent: CPEG 210.

CPEG 220 ***Computer Organization and Architecture*** ***(3)***

The fundamental elements of digital logic and their use in computer construction; register level description of computer execution and the functional organization of a computer; essential elements of computer architecture; major functional components of a modern computer system. Design principles associated with modern computer architectures; performance and cost considerations; architectural features influenced by such features as operating systems and window systems, high level languages, etc.; floating point arithmetic, performance of computer systems, processor implementation strategies, micro-programming, pipelining, CISC and RISC, vector processors; memory hierarchy, cache, virtual memory organization for high performance machines; A brief introduction to I/O and bus subsystems. Prerequisite: CPEG 210.

CPEG 301 ***IT Governance*** ***(3)***

This course introduces students to the foundation of Information Technology (IT) governance tools and techniques. As governance refers to the system used to manage, control, and operate a corporate, IT governance is a subset of corporate governance that focuses on the performance of the IT infrastructure and IT risk management. Corporates need to govern IT to ensure that the IT investments contribute to business goals and strategies. Standards and frameworks of IT governance (such as COBIT, Sarbanes-Oxley Act, Basel II, ISO/IEC 38500 ... etc.) are covered in this course. Prerequisites ENGL 102 and CSIS 120. [Cross-listed with CSIS 301]

CPEG 303 ***Introduction to Cybersecurity*** ***(3)***

This introductory course delves into the essential concepts and practices of cybersecurity, empowering students to safeguard online presence and understand the complexities of this dynamic field. The course covers core principles like information, network, and application security, the CIA triad - Confidentiality, Integrity, and Availability - crucial aspects of data protection, explores common threats like malware, phishing, and vulnerabilities, practical solutions like secure passwords, data encryption, and firewalls. Students will gain insights into the evolving cybersecurity landscape, including legal considerations and the role of professionals in safeguarding the digital world. Prerequisites CSIS 130. [Cross-listed with CSIS 303]

CPEG 303L ***Advanced Programming for Engineering Laboratory*** ***(1)***

Parallel programming: Multi-threaded applications, client server model, distributed computing. Basic database programming and

connectivity. Graphical user interface. C programming language for Java programmers: differences, pointers, and applications. Prerequisite: CSIS 210.

CPEG 330 ***Microprocessors & Interfacing*** ***(3)***

Microprocessor organization, multicore processors, programming model, assembly language programming, addressing modes, translating high-level programs to assembly language, arithmetic/logic operations, selection, looping, pointers, subroutines/macros, etc. I/O and buses, protocols, modern interfacing techniques, interfacing ICs, applications of microprocessors and microcontrollers, and software/hardware interface design; a lab component is included in this course. Prerequisites: CPEG 220 and ELEG 270. Concurrent: CPEG 330L.

CPEG 330L ***Microprocessors & Interfacing Laboratory*** ***(1)***

A microcontrollers-based laboratory component for the course CPEG 330 Microprocessors & Interfacing. The lab syllabus is aligned with the course topics. Concurrent: CPEG 330.

CPEG 331L ***Data Acquisition and Automation Laboratory*** ***(1)***

Data acquisition and automation using both software and hardware tools. Introduction to instrumentation and signal conditioning. Virtual instruments and graphical programming for the analysis and visualization of data. Interfacing analog and digital signals. Real-time interfacing, sensors, transducers, and actuators, found in industry. Prerequisite: CPEG 220.

CPEG 340 ***Embedded System Design*** ***(3)***

System design process: requirements analysis, specification, hardware/software co-design, testing; embedded computing platforms: general-and special-purpose processors, hardware accelerators, systems-on-a-chip, intellectual property (IP) core-based design; software design tools and technologies: CAD tools, compilers, and assemblers; hardware design tools and technologies: hardware-description languages, high-level synthesis tools, ASIC and FPGA design. Prerequisite: CPEG 220. Concurrent: CPEG 340L.

CPEG 340L ***Embedded System Design Laboratory*** ***(1)***

An FPGA-based laboratory component for the course CPEG 340 Embedded System Design. The lab syllabus is aligned with the course topics. Concurrent: CPEG 340.

CPEG 350 ***Data Communications and Computer Networks.*** ***(3)***

This course provides a basic technical introduction to data communication: encoding, modulating, and error detection & correction codes. Topics covered include networks classification; architecture (OSI reference model, TCP/IP, layer services, protocols, LANs, packet switching, routing, and addressing); network technologies and devices; network services; and an introduction to network security. Prerequisite: CPEG 210.

CPEG 350L ***Data Communication and Computer Networks Laboratory*** ***(1)***

A laboratory component for the course CPEG 350 Computer Networks. The lab syllabus is aligned with the course topics. Prerequisite: CPEG 350

CPEG 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with different topic. Permission of instructor.

CPEG 372 ***Introduction to Cryptography*** ***(3)***

This course empowers students to explore the domain of cryptography and the art and science of securing information. Students will learn how to encrypt messages and decrypt them using mathematical algorithms and secret keys, ensuring only authorized parties can access confidential data. Students will discover different encryption techniques and how they safeguard information in the digital age. They will understand the core principles behind secure communication and explore real-world applications, from protecting online transactions to securing your personal data. This introduction equips them with valuable knowledge to navigate the encrypted world around you. Prerequisites: CSIS 210 and MATH 213. [Cross-listed with CSIS 372]

CPEG 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with different topic. Permission of instructor.

CPEG 389 ***Special Topics in Computer Engineering*** ***(3)***

Can be repeated for credit with different topic. Permission of instructor.

CPEG 390 ***Introduction to the Internet of Things*** ***(3)***

This course provides an introduction to the basic concepts behind the internet of things: What is IoT, and how does it work? Students will study its basic design components, and learn how to design and implement a simple IoT application and prototype. The course also introduces smart devices, sensors and connectivity to the internet of meters, alerts and sensing devices. It provides a simple introduction to robotics, to the theory of communication between objects and computers, and to wireless protocols, web services related to IoT, embedded operating systems and microcontrollers. Prerequisites: CPEG 350

CPEG 411 ***Ethical Hacking*** ***(3)***

This course delves into the world of ethical hacking, where students learn the tools and techniques "white hat" hackers use to identify and address vulnerabilities in computer systems, with the permission of the owner. Explore ethical hacking methodologies, various attack vectors, and countermeasures used to fortify defenses. Gain an understanding of hacker mindsets and how to ethically exploit vulnerabilities to improve system security. This course provides a valuable foundation for those interested in cybersecurity careers or simply wanting to be more proactive in protecting their own digital assets. Prerequisites: CPEG 350. [Cross-listed with CSIS 411]

CPEG 415 ***Artificial Intelligence*** ***(3)***

This course provides students with the basic concepts, knowledge and skills required in utilizing Artificial Intelligence techniques in solving practical problems. Topics to be covered include but not limited to knowledge representation methods like propositional logic and predicate calculus, blind search strategies (breadth-first and depth-first), heuristic search strategies (hill-climbing, best-first and A*), backward and forward reasoning, applications; expert systems, natural language processing, pattern recognition, image processing, and planning. The practical part of the course involves programming exercises and case studies related to the topics covered. Prerequisite: CSIS 210 and MATH 213. [Cross-listed with CSIS 415]

CPEG 418 ***Computer Vision*** ***(3)***

This course provides an introduction to computer vision including fundamentals of image formation, camera imaging geometry, feature detection and matching, stereo, motion estimation and tracking, image classification and scene understanding. Methods for depth recovery from stereo images, camera calibration, automated alignment, tracking, boundary detection, and recognition will be covered. Machine learning and deep learning techniques will be used to tackle these problems. Prerequisite: CSIS 210 and MATH 213. [Cross-listed with CSIS 418]

CPEG 422 ***Digital Signal Processing*** ***(3)***

Digital processing of signals, sampling, difference equations, discrete-time Fourier transforms, discrete and fast Fourier transforms, digital filter design. Signal Processing under MATLAB. Prerequisite: ELEG 320.

CPEG 426 ***Digital Forensic*** ***(3)***

This course provides an introduction to digital forensics, the process of recovering, analyzing, and presenting digital evidence from electronic devices. Students will learn how to uncover hidden information, reconstruct digital events, and preserve electronic evidence for legal purposes. They will explore techniques used to extract data from computers, mobile devices, and cloud storage, while upholding ethical and legal considerations. This introduction equips students with skills necessary for the crucial role digital forensics plays in investigations and legal proceedings, and the intricacies of extracting valuable information from the digital world. Prerequisites: CSIS 310 and CPEG 350. [Cross-listed with CSIS 426]

CPEG 430 ***Introduction to Soft Computing*** ***(3)***

Soft computing techniques, fuzzy sets, membership functions, fuzzy logic, fuzzy rules, fuzzy reasoning, fuzzification and defuzzification, artificial neural networks, perceptrons, supervised learning, multi-layer, back propogation, probabilistic reasoning, Bayesian network, evolutionary computation, genetic algorithms, simulated annealing, swarm intelligence, continuous optimization, combinatorial optimization, real-world problems. Prerequisite: CSIS 210. Co-requisite: STAT 214. [Cross-listed with CSIS 432]

CPEG 435 ***Introduction to Machine Learning*** ***(3)***

435This course offers undergraduate students foundational principles and techniques of machine learning. This course covers essential topics including supervised learning algorithms such as linear regression and classification methods, unsupervised learning approaches like clustering and dimensionality reduction, as well as reinforcement learning concepts. Students will delve into the theoretical underpinnings of machine learning, including statistical learning theory and optimization techniques, while gaining practical experience through hands-on implementation and experimentation with popular machine learning libraries. By the end of the course, students will possess a solid understanding of machine learning fundamentals and be equipped with the skills to apply these techniques to real-world engineering and computer science problems. Prerequisite: CSIS 210. Co-requisite: STAT 214. [Cross-listed with CSIS 435]

CPEG 438 ***Neural Networks and Deep Learning*** ***(3)***

This course explores fundamental concepts such as feedforward and recurrent neural networks, convolutional neural networks (CNNs), and deep learning frameworks. Students will study advanced topics including optimization algorithms, regularization techniques, and deep learning applications in computer vision, natural language processing, and reinforcement learning. Through a combination of theoretical lectures and hands-on programming assignments, students will develop proficiency in designing, training, and fine-tuning neural network models for various tasks. By the end of the course, students will have acquired the knowledge and skills necessary to tackle complex problems in modern AI and contribute to cutting-edge research in the field. Prerequisite: CSIS 210. Co-requisite: STAT 214. [Cross-listed with CSIS 438]

CPEG 440 ***Computer Networks*** ***(3)***

This course explores modern computer network technologies, applications, and performance. It focuses on network architectures, TCP/IP protocol architecture, multimedia networking, network management, network security, and network performance analysis. The course particularly emphasizes data link layer technologies (like multiple access, Ethernet, wireless LANs, SONET/SDH, etc.), network layer technologies (such as logical addressing, Internet protocol, address mapping, and multicasting), transport layer technologies (e.g UDP, TCP, congestion control, quality of service), and application layer technologies (including domain name space, WWW, HTTP, email, and SNMP, among other topics). It also examines the general principles of network performance analysis through mathematical modeling and simulation. Prerequisite: CPEG 350.

CPEG 440L ***Computer Networks Laboratory*** ***(1)***

A laboratory component for the course CPEG 440 Computer Networks. The lab syllabus is aligned with the course topic. Co-requisite: CPEG 440.

CPEG 441 ***Hardware/Software Co-Design*** ***(3)***

Design models: state machines, concurrent process models, dataflow, communicating sequential processes, etc. Design partitioning, co-synthesis, co-stimulation, co-design. Transformational co-design, formal models, correctness. Functional

programming in HW design, concurrency, synthesis of parallel algorithms. HW Compilers. Prerequisite: CPEG 340.

CPEG 445 ***Cloud Computing*** ***(3)***

This course introduces the concept of cloud computing, its goals, benefits, and service models (IaaS, PaaS and SaaS). The course delves into the principles of virtualization, software-defined networks (SDNs) and storage (SDS), cloud storage, elastic computing, cloud networking, and cloud security. Also, the course highlights popular cloud services (such as Amazon Web Service, Microsoft Azure, Google Cloud ... etc.) and frameworks for data analytics. Prerequisite: CPEG 350. [Cross-listed with CSIS 445]

CPEG 450 ***Network Security*** ***(3)***

Fundamental security principles and real-world applications of Internet and computer security. Topics covered in the course include legal and privacy issues, risk analysis, attack and intrusion detection concepts, system log analysis, intrusion detection and packet filtering techniques, computer security models, computer forensics, and distributed denial-of-service (DDoS) attacks. Junior standing or permission of instructor. Prerequisite: CPEG 350. [Cross-listed with CSIS 450]

CPEG 455 ***Wireless Networks and Mobile Systems*** ***(3)***

Multidisciplinary, project-oriented design course that considers aspects of wireless and mobile systems. Including wireless networks and link protocols, mobile networking including support for the Internet Protocol suite, mobile middleware, and mobile applications. Junior standing or permission of instructor. Prerequisite: CPEG 350.

CPEG 460 ***Robotics*** ***(3)***

Project-oriented design course that includes topics on perception, sensors, computer vision, navigation, localization, actuation, manipulation, mobility. Intelligence: control, planning, and mission execution. Junior standing. Prerequisites: CPEG 330 and ELEG 320.

CPEG 470 ***Internship in Computer Engineering*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of computer engineering and related fields. Students are limited to a maximum of 6 internship credit hours. This is a pass/fail course. Junior standing and permission of instructor. Prerequisite: minimum GPA of 2.0.

CPEG 475 ***Senior Design Capstone I*** ***(3)*** ***[Z]***

A supervised project in groups of normally three students aimed at providing practical experience in some aspect of computer engineering. Students are expected to complete a literature survey, project specification, critical analysis, and to acquire the necessary material needed for their intended end product. Prerequisites: CPEG 340. Concurrent: CPEG 330.

CPEG 480 ***Senior Design Capstone II*** ***(3)***

A course that seeks to impart in students the skill to integrate the knowledge gained in different courses by asking them to develop a product that has passed through the design, analysis, testing, and evaluation stages. This course includes production of a professional report, design process and outcome, implementation and testing, and critical appraisal of the project. Prerequisite: CPEG 475.

CPEG 495 ***Professional Certification in Artificial Intelligence*** ***(3)***

A professional certification course in Artificial Intelligence. Prerequisites Completing 6 credits in the Artificial Intelligence track. Prerequisite: CSIS 210 and STAT 214. [Cross-listed with CSIS 495]

CPEG 496 ***Professional Certification in Security*** ***(3)***

A professional certification course in Security. Prerequisites: CPEG 350. [Cross-listed with CSIS 496]

Computer Science & IS (CSIS)

CSIS 101 ***Computer Skills and Emerging Technologies*** ***(3)*** ***[T]***

This course introduces students to different computing skills, such as: word processing, spread sheets and power point presentations. This course also explains different emerging technologies, such as: information systems and social media and their use in organizations. Students will have extensive hands-on training during supervised laboratory sessions.

CSIS 110 ***Foundations of Information Systems*** ***(3)*** ***[T]***

Information systems are an integral part of all business activities and careers. This course is designed to introduce students to contemporary information systems and demonstrate how these systems are used throughout global organizations. The focus of this course will be on the key components of information systems - people, software, hardware, data, and communication technologies, and how these components can be integrated and managed to create competitive advantage. Through the knowledge of how IS provides a competitive advantage, students will gain an understanding of how information is used in organizations and how IT enables improvement in quality, speed, and agility. This course also provides an introduction to system and development concepts, technology acquisition, and various types of application software that have become prevalent or are emerging in modern organizations and society.

CSIS 120 ***Computer Programming I*** ***(4)*** ***[T]***

This course introduces computer programing fundamentals and problem solving using Java programming language. Topics covered include but not limited to: data types, variables, operators, expressions and statements, input and output facilities, selection and conditional constructs,
iterative control structures, methods, and single-dimensional arrays.

CSIS 130 ***Computer Programming II*** ***(4)*** ***[T]***

This course continues with the Java language and builds upon the fundamental material covered in CSIS 120 by focusing on the Object-Oriented aspects of the language. Topics include but not limited to: multi-dimensional arrays, objects and classes, javadoc, inheritance and polymorphism, abstract classes and interfaces, exception handling, generics, collections (ArrayList), file I/O, and junit testing.

CSIS 150 ***Professional and Ethical Issues in CSIS*** ***(3)***

This course is designed to introduce students to critical issues in ethics in the context of computing. The focus will be on legal, ethical, privacy, and security issues in computer usage. Students learn how to evaluate real professional cases in the context of ethics and law. Case studies relating to computer ethics will be discussed. Professional code of ethics best practices (ACM and IEEE) will be introduced and evaluated. Prerequisites: CSIS 110 or CSIS 120.

CSIS 210 ***Data Structures and Algorithms*** ***(3)***

This course is designed to introduce students to basic data structures and basic sorting and searching algorithms. The course discusses appropriate use of built-in data structures and common applications for each of the following data structures: stack, queue, lists, trees, and graphs. The course includes a compare and contrast analysis of the costs and benefits of dynamic and static data structure implementations. Basic search and sort algorithms are introduced and compared. Recursion applications are introduced and analyzed.

CSIS 220 ***Assembly Language Programming*** ***(3)***

An introduction to Assembly language programming. Topics include but not limited to: introduction to CPU and memory, data representation, basics of assembly language, data transfer and addressing, procedures, conditional processing, arithmetic operations, stack frames, strings and arrays, structures and macros and floating-point unit programming. Prerequisite: CSIS 130.

CSIS 230 ***Programming in a Second Language*** ***(3)***

CSIS students are expected to have a depth in the Java language; CSIS students are also expected to have a breadth view of other languages. This course is one of those courses where students gain a breadth in another language such as Python. Topics include but not limited to: data types, variables, operators, expressions and statements, input and output facilities, selection and conditional constructs, iterative control structures, functions, lists & Dictionaries, File I/O, Objects & Classes. Prerequisite: CSIS 130.

CSIS 245 ***Introduction to Data Science*** ***(3)***

This course provides a foundational introduction to the field of data science, equipping students with the core concepts, tools, and techniques used to extract insights from data. Students will learn how to collect, clean, explore, analyze, and visualize data using programming tools such as Python or R. Prerequisite: CSIS 120 and STAT 203.

CSIS 245L ***Introduction to Data Science Laboratory*** ***(1)***

A laboratory component for the course CSIS 240 Introduction to Data Science. The lab syllabus is aligned with the course topics. Concurrent: CSIS 240

CSIS 250 ***Database Systems*** ***(3)***

This course provides the students with an introduction to the core concepts in data and information management. It is centered around the core skills of identifying organizational
information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system. The course will also include coverage of basic database administration tasks and key concepts of data quality and data security. Prerequisite: CSIS 130.

CSIS 255 ***Web Technologies*** ***(3)***

This course provides students with basic knowledge and technical aspects and skills needed to build Web applications. It covers a range of topics including but not limited to: basic concepts of the Internet and Internet programming, fundamentals of Website design, Websites building tools and languages, basics of XHTML, Scripting and Scripting Languages (e.g., Java Script), Web Servers and Web application servers, client-side programming, server-side programming, database connectivity to the Web applications, adding dynamic content to Web applications, programming the user interface for the Web applications. Students are expected to complete a project in the development and maintenance of Web sites. Prerequisite:CSIS 130.

CSIS 260 ***System Analysis, Design and Acquisition*** ***(3)***

This course discusses the processes, methods, techniques and tools used by organizations to determine how they should conduct their business with a particular focus on how computer-based technologies can most effectively contribute to the way business is organized. The course covers a systematic methodology for analyzing a business problem or opportunity, modelling it using a formal technique, determining what role, if any, computer-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf (COTS) packages. Prerequisite: CSIS 130.

CSIS 300 ***E-Commerce*** ***(3)***

This course focuses on the evolution of electronic commerce where business is conducted between organizations and individuals relying primarily on digital media and transmission. Participants investigate the opportunities and challenges of exchanging goods and services over communications networks as well as the manner in which relationships are being reshaped. New forms of business arrangements are also examined. Course activities are designed to provide both managerial and entrepreneurial assessments of anticipated advances in information technology with respect to business systems and electronic markets. Sophomore standing or permission of instructor. Prerequisite: CSIS 130.

CSIS 301 ***IT Governance*** ***(3)***

This course introduces students to the foundation of Information Technology (IT) governance tools and techniques. As governance refers to the system used to manage, control, and operate a corporate, IT governance is a subset of corporate governance that focuses on the performance of the IT infrastructure and IT risk management. Corporates need to govern IT to ensure that the IT investments contribute to business goals and strategies. Standards and frameworks of IT governance (such as COBIT, Sarbanes-Oxley Act, Basel II, ISO/IEC 38500 ... etc.) are covered in this course. Prerequisites ENGL 102 and CSIS 120. [Cross-listed with CPEG 301]

CSIS 302 ***IT Infrastructure*** ***(3)***

This course provides an introduction to IT infrastructure issues. It covers topics related to both computer and systems architecture and organization. This course gives students the ability to focus on hardware and systems software technology for designing organizational processes and software solutions that require in-depth understanding of the IT infrastructure capabilities and limitations. The course focuses strongly on core computing systems architecture concepts and structures, operating systems, data centers, security of IT infrastructure, cloud computing and computing as a service. Prerequisite: CSIS 210.

CSIS 303 ***Introduction to Cybersecurity*** ***(3)***

This introductory course delves into the essential concepts and practices of cybersecurity, empowering students to safeguard online presence and understand the complexities of this dynamic field. The course covers core principles like information, network, and application security, the CIA triad - Confidentiality, Integrity, and Availability - crucial aspects of data protection, explores common threats like malware, phishing, and vulnerabilities, practical solutions like secure passwords, data encryption, and firewalls. Students will gain insights into the evolving cybersecurity landscape, including legal considerations and the role of professionals in safeguarding the digital world. Prerequisites CSIS 130. [Cross-listed with CPEG 303]

CSIS 310 ***Introduction to Operating Systems*** ***(3)***

This course introduced students to the study of supervisory programs. The course will, start with a brief historical perspective of the evolution of operating systems and then cover the major components of the most operating systems such as process management (processed, threads, CPU scheduling, synchronization, and deadlock), memory management (segmentation, paging, swapping), files systems; and operating system support for distributed systems. This course will allow students to have an opportunity to learn a lot of practical information about how programming languages, such as: Java, C and C++, operating system, and architectures interact and how to use each effectively. Students will also gain an experience on how to use Linux as an operating system. Prerequisite: CSIS 210.

CSIS 320 ***Theory and Implementation of Programming Languages*** ***(3)***

This course covers fundamentals of computing theory and programming languages which mainly include: deterministic finite automata (DFA), non-deterministic automata (NFA), regular expression (RE), context free grammar (CFG), push-down automata (PDA), Turing machines, evaluation criteria, evolution of languages, language paradigms, formal methods for syntax and semantics (EBNF) and main constructs of languages. This course is majorly theoretical by its nature since it does not cover a specific programming language but rather the underlying concepts of computing theory and programming languages. Prerequisite: CSIS 210.

CSIS 322 ***Computer Networks and Data Communication*** ***(3)***

This course introduces the fundamentals of networking infrastructure, different types of networks and network hardware and

software. The course focuses on data transmission, switches, routers topology. wiring and physical topology protocol, layering LAN, WAN and internetworking. Prerequisite: CSIS 210 and MATH 213.

CSIS 329 ***Introduction to Computer Architecture*** ***(3)***

An introduction to digital computer hardware architecture and organization. Topics include data representation, digital logic, processor design, instruction set architecture, memory and systems performance. Prerequisite: CSIS 210.

CSIS 330 ***Software Engineering*** ***(3)***

This course is designed to introduce students to basic concepts of software engineering development cycle. Students learn techniques for collecting requirements, modeling design and best practices for documenting software projects. Students also use professional modeling tools throughout the development of their projects. The course places special emphasis on object-oriented modelling using UML. Students are expected to complete a medium scale software project and work professionally within a group. Prerequisite: CSIS 210.

CSIS 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

CSIS 370 ***Computer Graphics*** ***(3)***

This course provides students with the basic concepts, technical and mathematical knowledge and skills required to design and implement computer graphics. Topics to be covered include but not limited to: graphics hardware, software utilities, two and three dimensional transformation and viewing, graphics arts and animations. Students are expected to perform practical assignments to design programs using programming graphics tools and libraries (e.g., Java Applet, Java 2D and 3D API). Prerequisite: CSIS 210 and MATH 201.

CSIS 372 ***Introduction to Cryptography*** ***(3)***

This course empowers students to explore the domain of cryptography and the art and science of securing information. Students will learn how to encrypt messages and decrypt them using mathematical algorithms and secret keys, ensuring only authorized parties can access confidential data. Students will discover different encryption techniques and how they safeguard information in the digital age. They will understand the core principles behind secure communication and explore real-world applications, from protecting online transactions to securing your personal data. This introduction equips them with valuable knowledge to navigate the encrypted world around you. Prerequisites: CSIS 210 and MATH 213. [Cross-listed with CPEG 372]

CSIS 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

CSIS 389 ***Special Topics in Computer Science*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

CSIS 390 ***Special Topics in Information Systems*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

CSIS 395 ***Enterprise Systems*** ***(3)***

This course discusses the key aspects relating to the selection, implementation, adoption, diffusion and management of Enterprise

Resource Planning (ERP) Systems (also known as Enterprise Systems (ES). An ERP System is an off-the-shelf package that provides an integrated suite of applications which provide transaction processing and management information systems for the common core of business processes. Enterprise Systems also provide comprehensive administrative systems and help to automate and streamline business processes. ERP systems have been widely implemented worldwide, particularly in larger organizations. It is reported that ERP market exceeded USD$78 billion in 2004 and it has been one of the largest, fastest-growing application software industries in the world. While organizations invest substantial amount of resources in acquiring ERP systems from vendors such as SAP and Oracle, presumably expecting positive impacts to the organization and its functions, some ERP system projects have reported nil or detrimental impacts to the organizations and its functions. Junior standing or permission of instructor.

CSIS 401 ***Mobile Computing*** ***(3)***

This course provides an introduction to mobile computing and mobile application development. Students will have a hands-on experience with the technologies, tools, and techniques used to develop mobile software solutions for business or entertainment. Junior standing. Prerequisite: CSIS 130.

CSIS 402 ***Fundamental Techniques for Data Science Applications*** ***(3)***

This course introduces the fundamental techniques of programming languages for Data Science. The course assumes some background in programming and solid knowledge in statistics. There will be a major project that students must complete that solves a real-world problem. Prerequisites: CSIS 230 and STAT 201.

CSIS 404 ***Data Mining and Knowledge Discovery*** ***(3)***

This course introduces the fundamentals of Data Mining and Knowledge Discovery in a practical and hands-on learning environment. Covered topics include data collection, representation, organization, knowledge discovery and representation, clustering algorithms, classification algorithms, models evaluations, association methods, visualization techniques. Prerequisites: CSIS 230 and STAT 201.

CSIS 405 ***Analysis of Algorithms*** ***(3)***

This course is designed to introduce students to algorithm analysis and strategies. The course explains different strategies used for solving problems (brute-force, greedy, divide- and-conquer, decrease-and-conquer, transform- and conquer, and dynamic programming). The course introduces comparison of the runtime efficiency of solutions using different strategies. Space and time efficiency are discussed, compared and analyzed for different types of applications. Prerequisite: CSIS 210 and MATH 201.

CSIS 406 ***Big Data Technologies*** ***(3)***

This course provides an exploration of the technologies and tools used for managing and analyzing large-scale datasets, commonly referred to as big data. Students will learn about the challenges and opportunities associated with big data, including data storage, processing, and analysis. The course covers a range of big data technologies, including distributed file systems, NoSQL databases, and parallel processing frameworks. Students will gain hands-on experience with industry-standard tools through exercises and projects. Prerequisites: CSIS 230 and STAT 201.

CSIS 411 ***Ethical Hacking*** ***(3)***

This course delves into the world of ethical hacking, where students learn the tools and techniques "white hat" hackers use to identify and address vulnerabilities in computer systems, with the permission of the owner. Explore ethical hacking methodologies, various attack vectors, and countermeasures used to fortify defenses. Gain an understanding of hacker mindsets and how to ethically exploit vulnerabilities to improve system security. This course provides a valuable foundation for those interested in cybersecurity careers or simply wanting to be more proactive in protecting their own digital assets. Prerequisites: CSIS 322. [Cross-listed with CPEG 411]

CSIS 415 ***Artificial Intelligence*** ***(3)***

This course provides students with the basic concepts, knowledge and skills required in utilizing Artificial Intelligence techniques in solving practical problems. Topics to be covered include but not limited to knowledge representation methods like propositional logic and predicate calculus, blind search strategies (breadth-first and depth-first), heuristic search strategies (hill-climbing, best-first and A*), backward and forward reasoning, applications; expert systems, natural language processing, pattern recognition, image processing, and planning. The practical part of the course involves programming exercises and case studies related to the topics covered. Prerequisite: CSIS 210 and MATH 213. [Cross-listed with CPEG 415]

CSIS 417 ***Intelligent Systems*** ***(3)***

This course provides students with an understanding of the principles of decision making in organizations, an appreciation of the concepts of intelligent systems (IS) and decision support systems (DSS) across various disciplinary areas, and the acquisition of skills in the identification, verification and construction of DSS/IS. Prerequisite: CSIS 210.

CSIS 418 ***Computer Vision*** ***(3)***

This course provides an introduction to computer vision including fundamentals of image formation, camera imaging geometry, feature detection and matching, stereo, motion estimation and tracking, image classification and scene understanding. Methods for depth recovery from stereo images, camera calibration, automated alignment, tracking, boundary detection, and recognition will be covered. Machine learning and deep learning techniques will be used to tackle these problems. Prerequisite: CSIS 210 and MATH 213. [Cross-listed with CPEG 418]

CSIS 425 ***Advanced Software Engineering*** ***(3)***

This course is deigned to introduce students to advanced and contemporary software engineering topics. Advanced Object Oriented software engineering topics will be covered including: design patterns, testing, project management, and metrics to measure quality of code. In addition, the course will also introduce the challenges of distributed software development. Students have to develop small framework, document it and use it to develop at least one application. Prerequisite: CSIS 330.

CSIS 426 ***Digital Forensics*** ***(3)***

This course provides an introduction to digital forensics, the process of recovering, analyzing, and presenting digital evidence from electronic devices. Students will learn how to uncover hidden information, reconstruct digital events, and preserve electronic evidence for legal purposes. They will explore techniques used to extract data from computers, mobile devices, and cloud storage, while upholding ethical and legal considerations. This introduction equips students with skills necessary for the crucial role digital forensics plays in investigations and legal proceedings, and the intricacies of extracting valuable information from the digital world. Prerequisites: CSIS 310 and CSIS 322. [Cross-listed with CPEG 426]

CSIS 432 ***Introduction to Soft Computing*** ***(3)***

This course encompasses various computational techniques inspired by natural processes and covers key components of Soft computing techniques, fuzzy sets, membership functions, fuzzy logic, fuzzy rules, fuzzy reasoning, fuzzification and defuzzification, artificial neural networks, perceptrons, supervised learning, multi-layer, back propagation, probabilistic reasoning, Bayesian network, evolutionary computation, genetic algorithms, simulated annealing, swarm intelligence, continuous optimization, combinatorial optimization, real-world problems. Prerequisite: CSIS 210. Co-requisite: STAT 201. [Cross-listed with CPEG 430]

CSIS 435 ***Introduction to Machine Learning*** ***(3)***

This course offers undergraduate students foundational principles and techniques of machine learning. This course covers essential topics including supervised learning algorithms such as linear regression and classification methods, unsupervised learning approaches like clustering and dimensionality reduction, as well as reinforcement learning concepts. Students will delve into the theoretical underpinnings of machine learning, including statistical learning theory and optimization techniques, while gaining practical experience through hands-on implementation and experimentation with popular machine learning libraries. By the end of the course, students will possess a solid understanding of machine learning fundamentals and be equipped with the skills to apply these techniques to real-world engineering and computer science problems. Prerequisite: CSIS 210. Co-requisite:

STAT 201. [Cross-listed with CPEG 435]

CSIS 438 ***Neural Networks and Deep Learning*** ***(3)***

This course explores fundamental concepts such as feedforward and recurrent neural networks, convolutional neural networks (CNNs), and deep learning frameworks. Students will study advanced topics including optimization algorithms, regularization techniques, and deep learning applications in computer vision, natural language processing, and reinforcement learning. Through a combination of theoretical lectures and hands-on programming assignments, students will develop proficiency in designing, training, and fine-tuning neural network models for various tasks. By the end of the course, students will have acquired the knowledge and skills necessary to tackle complex problems in modern AI and contribute to cutting-edge research in the field. Prerequisite: CSIS 210. Co-requisite: STAT 201. [Cross-listed with CPEG 438]

CSIS 440 ***Software Project Management*** ***(3)***

This course discusses the processes, methods, techniques and tools that organizations use to manage their software projects. The course covers a systematic methodology for initiating, planning, executing, controlling, and closing projects. This course assumes that project management in the modern organization is a complex team-based activity, where various types of technologies (including project management software as well as software to support group collaboration) are an inherent part of the project management process. This course also acknowledges that project management involves both the use of resources from within the firm, as well as contracted from outside the organization. Junior standing or permission of instructor. Prerequisite: CSIS 330.

CSIS 445 ***Cloud Computing*** ***(3)***

This course introduces the concept of cloud computing, its goals, benefits, and service models (IaaS, PaaS and SaaS). The course delves into the principles of virtualization, software-defined networks (SDNs) and storage (SDS), cloud storage, elastic computing, cloud networking, and cloud security. Also, the course highlights popular cloud services (such as Amazon Web Service, Microsoft Azure, Google Cloud ... etc.) and frameworks for data analytics. Prerequisite: CSIS 322. [Cross-listed with CPEG 445]

CSIS 450 ***Network Security*** ***(3)***

Fundamental security principles and real-world applications of Internet and computer security. Topics covered in the course include legal and privacy issues, risk analysis, attack and intrusion detection concepts, system log analysis, intrusion detection and packet filtering techniques, computer security models, computer forensics, and distributed denial-of-service (DDoS) attacks. Junior standing or permission of instructor. Prerequisite: CSIS 322. [Cross-listed with CPEG 450]

CSIS 455 ***Wireless Networks and Mobile Systems*** ***(3)***

Multidisciplinary, project-oriented design course that considers aspects of wireless and mobile systems. Including wireless networks and link protocols, mobile networking including support for the Internet Protocol suite, mobile middleware, and mobile applications. Junior standing or permission of instructor. Prerequisite: CSIS 322.

CSIS 470 ***Practicum in Computing & Information Systems*** ***(1 - 3)***

This course is deigned to introduce students to an internship experience. Students are encouraged to find a related placement in the field of IT in a local/international organization. A supervisor from AUK and the placement organization are required to coordinate and validate the internship activities. Students write a report summarizing what the internship job added to his or her knowledge of computer science. Students normally enroll in internship in their senior year to guarantee having enough background to function properly in a professional environment. This is a pass/fail course. Permission of instructor.

CSIS 475 ***Compiler Construction*** ***(3)***

Principles and practices in the design of compilers. Introduction to formal languages. Lexical analysis and syntax analysis. Top-down and bottom-up parsing. Syntax directed translation and syntax trees. Intermediate forms, symbol tables, and code

generation. Junior standing or permission of instructor. Prerequisite: CSIS 320.

CSIS 476 ***Computer Security and Information Assurance*** ***(3)***

This course provides an introduction to fundamental computer security issues. The course covers theory and practice of computer security and information assurance. Students will have hands-on experience with using security tools. Security threats and countermeasures against them will be discussed. Prerequisite:CSIS 302 or CSIS 310.

CSIS 480 ***Business Process Management*** ***(3)***

Business process management (BPM) is concerned with the concepts, methods, and techniques that support the design, administration, configuration, enactment, analysis and automation of business processes. In this course students will be introduced (1) to key concepts and approaches to business process management and improvement, (2) to the way in which information technology can be used to manage, transform, and improve business processes. The main focus of this course is both understanding and designing business processes within IS Environment. Students will learn how to identify, document, model, asses, and improve core business processes within that environment. Prerequisite: CSIS 260 or CSIS 330.

CSIS 490 ***Computer Science and Information Systems Capstone I*** ***(3)*** ***[Z]***

This course integrates core topics of the computer science or information Systems body of knowledge, teamwork, and professional practices through the implementation of a large- scale project. Senior standing.

CSIS 491 ***Computer Science and Information Systems Capstone II*** ***(3)***

This course integrates core topics of the computer science or information Systems body of knowledge, teamwork, and professional practices through the implementation of a large scale project. The development phases included in the course are design and implementation of a fully functioning project. Senior standing. Prerequisite: CSIS 490.

CSIS 493 ***Professional Certification in Data Science*** ***(3)***

A professional certification course in Data Science. Prerequisite: Completing 6 credits in the Data Science track.

CSIS 495 ***Professional Certification in Artificial Intelligence*** ***(3)***

A professional certification course in Artificial Intelligence. Prerequisites Completing 6 credits in the Artificial Intelligence track. Prerequisite: CSIS 210 and STAT 201. [Cross-listed with CPEG 495]

CSIS 496 ***Professional Certification in Security*** ***(3)***

A professional certification course in Security. Prerequisites: CSIS 322. [Cross-listed with CPEG 496]

Drama (DRAM)

DRAM 101 ***Theatre Appreciation*** ***(3) [G], [H]***

An introductory survey of the development of theatre from Ancient Greek Comedy and Tragedy to modern American and English drama.

DRAM 150 ***Introduction to Acting*** ***(3) [H], [O]***

An introductory course into acting focusing on terminology, movement, and various contemporary western acting methods.

DRAM 160 ***Theatre Practicum*** ***(3) [H], [O]***

Faculty directed theatre production. Specific dramatic material will vary. Students will have an opportunity to gain initial experience in acting, stage management, dramaturgy, assistant direction, design (costume/ lighting/ scenic), or as other production staff. DRAM 160 runs concurrently with DRAM 360 and students cannot be enrolled in both during one semester.

DRAM 211 ***Contemporary Theatre*** ***(3) [G], [H]***

Survey course designed to familiarize the student with contemporary works of dramatic literature works from 1879 to the present.

DRAM 212 ***Ancient Greek Theatre*** ***(3) [H], [X]***

An in-depth survey course of the dramatic writings of the ancient Greek world, this course will acquaint the student with some of the first works of the Western civilization.

DRAM 213 ***Shakespeare for Beginners*** ***(3) [H], [X]***

A broad survey course of selected scenes and other material from the dramatic works of William Shakespeare.

DRAM 250 ***Acting*** ***(3) [H], [O]***

A continuation of Intro to Acting, with a focus on the Stanislavsky method and Chekhov. Prerequisite: DRAM 150.

DRAM 350 ***Shakespeare in Performance*** ***(3) [H], [O]***

An exploration into Shakespeare's prose and poetry through text and performance. Text analysis and scansion techniques will be discussed as well as sonnet composition. Sophomore standing.

DRAM 360 ***Theatre Production*** ***(3) [H], [O]***

Faculty directed theatre production. Specific dramatic material will vary. Opportunity is open to any students by audition or related academic work to qualify for a position of major responsibility as an actor a crewmember as designated by the director. May be repeated for credit. Permission of Instructor.

DRAM 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with different topic. Permission of instructor.

DRAM 388 ***Independent Study*** ***(3) [Z]***

Can be repeated for credit with different topic. Permission of instructor

DRAM 389 ***Special Topics*** ***(1 - 3)***

Can be repeated for credit with different topic. Permission of instructor.

Economics (ECON)

ECON 101 ***Introduction to Contemporary Economic Issues*** ***(3) [X]***

Introduction to fundamental concepts of micro- and macro-economics and the tools that are generally used to analyze current business and economic issues.

ECON 200 ***Principles of Microeconomics*** *(3)*

An introduction to major theories of microeconomics. Topics include: coping with scarcity, supply and demand model and the price system, role of government, firm behavior and market mechanism. Prerequisite: MATH 103 or 110 or 201.

ECON 201 ***Principles of Macroeconomics*** *(3)*

An introduction to major theories of macroeconomics. Topics include: national income accounting, economic growth and productivity, unemployment, inflation, economy-stabilizing institutions. Concurrent: ECON 200.

ECON 302 ***Quantitative Methods for Business and Economics*** *(3)*

Apply theoretical and empirical knowledge of mathematics and statistics to understand and quantify economic and business relationships. Topics include mathematical functions, systems of equations, derivatives, static optimization, hypothesis testing, analysis of variance, simple and multiple linear regression, univariate time-series techniques, and the time value of money. Statistical software and real world data are used for advanced computations. Pre-requisite: MATH 103 or 110 and BUS 209.

ECON 304 ***Economics of Labor*** *(3)*

The application of economic theory to current labor problems, domestic and foreign. Problems include wage theory and wage differentials, training policy, poverty, unemployment and underemployment, migration, discrimination, issues of productivity, industrialization and union policies. Prerequisites: ECON 200 and ECON 201.

ECON 305 ***International Economics*** *(3)*

Theories and concepts of international trade; real flows; terms of trade; industry structure and resource differences; international competitiveness; the effects of international trade on the economies of importing and exporting countries; the effects of tariffs and quotas and other nontariff barriers on international trade. Also includes multinational corporations, trade and development, customs, and unions. Prerequisites: ECON 200 and ECON 201.

ECON 310 ***Intermediate Microeconomics*** *(3)*

Expand the use of microeconomics principles and concepts to describe real world current business and economics events. Topics include households and firms' behaviors and their interactions, market structure and their implications for the overall allocation of resources and social welfare, and government intervention and tools to improve the functioning and outcome of markets. Pre-requisite: ECON 200, ECON 201 and BUS 209.

ECON 312 ***Intermediate Macroeconomics*** *(3)*

Examine functioning of the aggregate economy using theories of national income accounting, price level, employment, economic growth and its long run determinants, business-cycle and macroeconomics fluctuations, monetary and fiscal policy. Apply macroeconomic models to explain the determination of aggregate output and growth. Pre-requisite: ECON 200, ECON 201 and BUS 209.

ECON 315 ***Managerial Economics*** *(3)*

The course focuses on the application of the concepts of economics to managerial issues. It integrates economic principles with modern management techniques and theory for the purpose of efficient managerial decision-making. Topics include optimization techniques, demand estimation, production and cost analysis, alert structure, and pricing practices. Prerequisites: ECON 200, ECON 201, and BUS 209.

ECON 351 ***Money and Banking*** *(3)*

Analysis of capital markets and the role of banks, and other financial institutions in the economy. Prerequisites: ECON 200 and ECON 201.

ECON 363 ***Environmental & Natural Resource Economics*** ***(3)***

An introductory course in the environmental and natural resource economics, it is designed to help students explore the important role of economics in the design and implementation of policy and management of natural and environmental resources. Prerequisites: ECON 200 and ECON 201.

ECON 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with different topic. Permission of instructor.

ECON 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Independent study by student with the requirement that the student writes a report summarizing the knowledge acquired during the period of study. Permission of instructor. Prerequisite: ECON 209.

ECON 389 ***Special Topics*** ***(3)***

An analysis of contemporary issues in economic theory. Can be repeated for credit with a different topic. Permission of instructor. Prerequisites: ECON 200 and ECON 201.

ECON 405 ***Comparative Economic Systems*** ***(3)***

A theoretical and historical evaluation of different economic systems, planning strategies and their effects on economic growth, democracy, equity and effectiveness; assessment of the historical experience of the formerly socialist economies; distinctive features of European and Japanese economies and Third World societies. Prerequisites: ECON 200 and ECON 201.

ECON 409 ***Economic Development*** ***(3)***

Theories and policies of economic development; role of international institutions; impact of international trade policy, international capital flows, exchange rate policies, inflation, public finance, monetary policy, competitiveness, military expenditures; agriculture, population, and the environment. Prerequisites: ECON 200 and ECON 201.

ECON 413 ***Economics Capstone: Development & Resources Economics*** ***(3)***

This course applies theories and methods to expand an understanding of economics. A key component is a guided research project that uses prior economics and business training to hone analytical and decision-making skills. Students improve analytical capacities and develop responses to contemporary economic challenges. Prerequisite: Senior Standing.

ECON 429 ***Environmental and Energy Policy*** ***(3)***

The course will examine the principles, policy instruments, and current practice of using economics to analyze various environmental and natural resource problems, especially the economics of energy. It focuses on the study of environmental protection, evaluation of environmental costs and benefits, and optimal management of energy resources. Prerequisites: ECON 200 and ECON 201.

ECON 452 ***Econometrics*** ***(3)***

Review of econometric statistics and statistical techniques; the application of statistical models to economic data; regression analysis and estimation of economic models; the question of violations of the basic assumptions of the regression model, dummy variables and analysis of variance; index numbers and time series analysis. Prerequisites: ECON 300 and ECON 301.

ECON 470 ***Internship in Economics*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to

his/her knowledge of Economics and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

ECON 485 ***Seminar in Economics*** ***(3)***

A seminar for seniors; majors conduct research projects on varying relevant economic issues; presentation of research approaches, subjects and results; a group project and an individual research project may be allowed. Topics and instructor may vary. Senior standing.

Education (EDUC)

EDUC 389 ***Special Topics*** ***(3)***

Can be repeated for credit with different topic. Permission of instructor.

Electrical Engineering (ELEG)

ELEG 220 ***Electric Circuits*** ***(3)***

Introduction to the basic laws and techniques for electric circuits analysis, response of circuits with resistors, independent sources, controlled sources, operational amplifiers; Transient analysis of basic circuits with R, L, and C components. AC analysis and phasors; An Introduction to Matlab. A lab component is included in this course. Prerequisite: PHYS 116. Concurrent: ELEG 220L and MATH 210.

ELEG 220L ***Electric Circuits Laboratory*** ***(1)***

A laboratory component for the course ELEG 220 Electric Circuits. The lab syllabus is aligned with the course topics. Implementations are done using hardware circuits and software simulation tools. Concurrent: ELEG 220.

ELEG 270 ***Electronics*** ***(3)***

Introduction to the basic electronic devices including diodes and transistors and their operating principles. Analysis of electronic circuits operating under dc bias and switching conditions. Applications of devices in digital electronic circuits. Prerequisite: ELEG 220. Concurrent: ELEG 270L.

ELEG 270L ***Electronics Laboratory*** ***(1)***

A laboratory component for the course ELEG 270 Electronics. The lab syllabus is aligned with the course topics. Implementations are done using hardware circuits and software simulation tools. Concurrent: ELEG 270.

ELEG 300 ***Engineering Electromagnetics*** ***(3)***

Static electric & Magnetic fields, conductors, capacitance, electrostatic energy and forces, Poisson's equation, Biot-Savart law, Ampere's law, vector magnetic potential, inductance, Maxwell's equations, Faraday's law, time-harmonic fields, wave propagation, reflection, and transmission lines. Prerequisites: ELEG 220 and MATH 206.

ELEG 301L ***Programmable Logic Controllers Lab*** ***(1)***

Configuration of specified PLC Hardware, basics of FB and FC Programming, IEC Timers and IEC Counters, basic of diagnostics and diagnostics via Web, programming of analog values, Global Data blocks, basics of WinCC and programming of PIC Controller. Prerequisite: CPEG 210

ELEG 305 ***Introduction to Biomedical Engineering*** ***(3)***

This course provides an overview of the biomedical engineering field. It introduces the interface between engineering and health science; analyzes biological and physiological problems in health care, and explores bioinstrumentation, bioimaging, biomechanics, biomaterials, and biomolecular engineering. Students will study case studies and examples of bio-sensors and bio-signal processing, and will examine moral and ethical issues in this field. Prerequisite: ELEG 220.

ELEG 310 ***Electric Machines and Power Fund*** ***(3)***

3-phase circuits and power calculation, magnetic circuits. Transformers: single-phase, construction, operation, autotransformers, and 3-pbase. AC and DC machines. Synchronous generators: construction, equivalent circuits, testing and performance characteristics; Induction motors. Prerequisite: ELEG 220. Concurrent: ELEG 310L.

ELEG 310L ***Electric Machines Laboratory*** ***(1)***

A laboratory component for the course ELEG 310 Electric Machines. The lab syllabus is aligned with the course topics. Concurrent: ELEG 310.

ELEG 311 ***Power Distribution and Utilization*** ***(3)***

The course covers the design of a radial and/or meshed power distribution network, and assessment of a power network for thermal capability, power loss and economic operation. The course also includes topics related to cost analysis (fixed and variable costs), optimization of a distribution network, power quality analysis and an overview of electricity markets. Pre-requisite: ELEG 310.

ELEG 320 ***Signals & Systems*** ***(3)***

Signals (functions of one or more independent variables) and Systems (devices that perform operations on signals) present fundamental concepts that arise in a variety of fields. The ideas and techniques associated with these concepts inform such diverse disciplines as biomedical engineering, acoustics, communications, aeronautics and astronautics, circuit design, and the arts, humanities, and social sciences. Topics include transforms (Z, Laplace, Fourier), frequency analysis, convolution, FIR and IIR systems, stability, generalized functions, modulation (AM and FM), sampling, and digital filtering. Prerequisite: ELEG 220. Concurrent: ELEG 320L.

ELEG 320L ***Signals & Systems Laboratory*** ***(1)***

A laboratory component for the course ELEG 320 Signals & Systems. The lab syllabus is aligned with the course topics. Implementations are done using hardware circuits and software tools. Concurrent: ELEG 320.

ELEG 321 ***Analog and Digital Filters*** ***(3)***

The course covers the Butterworth, Chebyshev, Elliptic, and other analog filters' approximation functions, lowpass, highpass, bandpass, and bandstop filters, active analog filter implementations using Op-Amps, digital filter design, and the use of CAD tools for analysis and design of filters. Prerequisites: ELEG 320.

ELEG 323 ***Measurement and Instrumentation*** ***(3)***

In this course, students study the use of resistive, capacitive, inductive and piezoelectric transducers; the measurement of displacement, velocity and acceleration (translational and rotational), force, torque, vibration and shock; the measurement of pressure, flow, temperature and liquid level, pH, conductivity, viscosity and humidity. The course also explores the design of instrumentation systems using various signal conditioning, transmitting, and logging techniques. Student will examine case studies in different applications, with a focus in process industry. Pre-requisite: ELEG 220.

ELEG 323L ***Measurements and Instrumentation Lab*** ***(1)***

A laboratory component for the course ELEG 323 Instrumentation. The lab syllabus is aligned with the course topics.

Corequisite: ELEG 323.

ELEG 325 ***Communication Systems*** ***(3)***

This course introduces students to communication systems, sampling theorem, modulation theory, multiplexing, random processes for communication systems, baseband digital signaling, and related topics. Pre-requisite: ELEG 320.

ELEG 330 ***Power System Analysis*** ***(3)***

Examines power system concepts; transmission line, transformer and rotating machine modeling; steady-state analysis and power flow; fault analysis; theory of symmetrical components; and power system stability. Prerequisite: ELEG 310. Concurrent: ELEG 330L.

ELEG 330L ***Power Systems Laboratory*** ***(1)***

A laboratory component for the course ELEG 330 Power System Analysis. The lab syllabus is aligned with the course topics. Concurrent: ELEG 330.

ELEG 331 ***Power System Protection*** ***(3)***

This course introduces the fundamental concepts of various types of protections used in electrical power networks to ensure the safety of people and equipment in case of abnormal conditions or accidental contacts. Students will explore applications and case studies in transmission lines, generators, motors, transformers, bus bars, and power distribution feeders/networks, and will study modern information and communication technologies (ICT)-based protection schemes. Prerequisites: ELEG 310.

ELEG 331L ***Power System Protection Lab*** ***(1)***

A laboratory component for the course ELEG 331 (Power System Protection). The lab syllabus is aligned with the course topics. Concurrent: ELEG 331.

ELEG 340 ***Fundamentals of High Voltage Engineering*** ***(3)***

This course introduces students to the high voltage (HV) equipment used in electrical power networks; electrostatics and electrical stress; gas, liquid and solid insulation materials; insulation co-ordination; the generation of HV; and HV testing and measurement equipment. Prerequisites: ELEG 220.

ELEG 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with different topic. Permission of instructor.

ELEG 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with different topic. Permission of instructor.

ELEG 389 ***Special Topics in Electrical Engineering*** ***(3)***

Can be repeated for credit with different topic. Permission of instructor.

ELEG 411 ***Electric Drives*** ***(3)***

Analysis of dc and poly-phase induction motors, starting, and control; AC solid-state control, dc link in adjustable speed drivers, voltage and frequency controls, braking and plugging; DC rectifier and chopper, dynamic and regenerative braking, plugging;

stepper motors; power drive; special-purpose motors. Prerequisite: ELEG 310.

ELEG 412 ***Renewable Energy Systems*** ***(3)***

This course focuses on modeling and analysis of renewable energy sources, such as wind generation and solar panels, power electronics for renewable energy systems, and integration of renewable energy systems with the distribution grid. Students will model and analyze short and long-term energy storage systems. Prerequisite: ELEG 310.

ELEG 421 ***Control Systems*** ***(3)***

Control Systems. Advantages of closed-loop feedback systems. System representations using mathematical models, block diagrams & signal flow graphs. Poles and zeros. P, Pl & PID controllers. System design & stability. Frequency response techniques, Root-locus, & Bode-plot analysis. Basic lead-lag compensation. Control systems under MATLAB. Prerequisite: ELEG 320; or STEG 210 and ELEG 220. Prerequisite: ELEG 320 or STEG 210 and ELEG 220.

ELEG 421L ***Control Systems Laboratory*** ***(1)***

A laboratory component for the course ELEG 421 Control Systems. The lab syllabus is aligned with the course topics. Concurrent: ELEG 421.

ELEG 422 ***Digital Control*** ***(3)***

Analysis and design of discrete-time feedback control systems. Z-transforms, transfer functions, state-space models. Sampling, A/D and D/A converters, sampled-data systems. Discrete equivalent systems. Transient specifications, steady-state tracking errors, stability, quantization effects. Digital PID controllers. Implementation of digital controller. Digital control systems under MATLAB. Prerequisite: ELEG 320; or STEG 210 and ELEG 220.

ELEG 450 ***Modern Antennas in Wireless Telecommunications*** ***(3)***

This course explores the fundamental theory and practice of antenna design and deployment in modern wireless telecommunication systems. Pre-requisite: ELEG 300.

ELEG 470 ***Internship in Electrical Engineering*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of Electrical Engineering and related fields. Students are limited to a maximum of 6 internship credit hours. This is a pass/fail course. Junior standing and permission of instructor. Prerequisite: minimum GPA of 2.0.

ELEG 471 ***Power Electronics*** ***(3)***

Operating characteristics of BJTs, IGBTs, MOSFETs, Thyristors. Diode circuits & rectifiers, source inductance, 3- phase rectifiers dc- dc switched mode converters, buck, boost, & buck- boost circuits, bridge converter; PWM inverters, voltage control, harmonics, 3- phase inverters; gate & base drive circuits, snubber circuits. Prerequisite: ELEG 270.

ELEG 471L ***Power Electronics Laboratory*** ***(1)***

A laboratory component for the course ELEG 471 Power Electronics. The lab syllabus is aligned with the course topics. Concurrent: ELEG 471.

ELEG 472 ***CMOS Digital Circuit Design*** ***(3)***

This course explores the design aspects involved in the realization of CMOS digital integrated circuits from device up to the register level. It addresses major design methodologies. The course includes the study of the MOS device, CMOS inverter, critical

interconnect and gate characteristics that determine the performance of CMOS digital circuits. It also includes CMOS logic design from transistor level to layout for fabrication. Students will use state-of- the art CAD tools to verify designs and develop efficient circuit layouts. Prerequisite: ELEG 270.

ELEG 475 ***Senior Capstone Design I*** ***(3)*** ***[Z]***

A supervised project in groups of normally three students aimed at providing practical experience in Electrical Engineering. Students are expected to complete a literature survey, project specification, critical analysis, and to acquire the material needed for their end product. Prerequisites: ELEG 270, CPEG 220, and ELEG 310.

ELEG 480 ***Senior Capstone Design II*** ***(3)***

A course that seeks to impart in students the skill to integrate the knowledge gained in different courses by developing a product that has passed through the design, analysis, testing, and evaluation stages. This course includes the production of a professional report. Prerequisite: ELEG 475.

English Language & Literature (ENGL)

ENGL 100 ***Foundations of Academic Reading and Writing*** ***(4)*** ***[E]***

Prepares students to read and write for academic purposes. Through a small-class workshop environment centered on reading and writing activities, class discussion, small-group collaboration, individual conferences with instructors, and supplemental lab workshops, students will develop their understanding of and facility with a variety of reading and writing strategies necessary for success in university. A concurrent lab section is required. Prerequisite: TOEFL internet-based (iBT) reading score of 13 and writing score or 14. Additional placement testing may be required.

ENGL 101 ***Approaches to Critical Reading and Writing*** ***(3)*** ***[E]***

Focuses on writing and reading for various academic and general purposes and audiences. Students develop analytical, critical, and argumentative thinking, reading and writing abilities and are introduced to research practices. Prerequisites: Score of 80 or higher on the Accuplacer reading exam and a score of 6 or higher on the Accuplacer essay exam, OR a TOEFL iBT reading score of 18 or higher and a writing score of 17 or higher, OR a grade of C or better in ENGL 100 or IENG 030/031. A grade of "C-" or better must be earned to pass this course.

ENGL 102 ***Writing and Information Literacy*** ***(3)*** ***[E]***

This course introduces to writing strategies and concepts applicable across a variety of fields. It develops students' reading and writing skills across a variety of disciplines with a focus on critical thinking. The course enables students to incorporate research and inquiry into specific content areas. Prerequisite: ENGL 101. A grade of "C-" or better must be earned to pass this course.

ENGL 200 ***Introduction to Literary Studies*** ***(3) [H], [O]***

Introduces students to the elements of literature and literacy analysis. Students learn what makes a piece of writing “literary,” as well as the terms and skills needed to read, understand, and analyze literature. The course covers literacy genres and critical approaches, providing a foundation for more advanced literary studies. Co-requisite: ENGL 102.

ENGL 207 ***Introduction to Rhetorical Studies*** ***(3) [H], [O]***

Outlines rhetoric from its roots in the classical world to its many variations over time and culture. Central to the course is the role of rhetoric in determining the multiple ways in which discourse is constructed to achieve specific ends. Pre-requisite: ENGL 101.

ENGL 220 ***Survey of World Literatures I*** *(3) [H], [O]*

Surveys the canon from antiquity to the medieval, introducing the myth, epic, and romance: Highlights motifs, tropes and prosody in selections such as Gilgamesh, Oedipus Rex, Ramayana, Beowulf, Decameron. Prerequisite: ENGL 102 and ENGL 200.

ENGL 221 ***Survey of World Literatures II*** *(3) [H], [O]*

Surveys the canon's formal innovations, fictional realism and psychological interiority from the birth of the novel onward in extracts from Don Quixote, Candide, Robinson Crusoe, Waverley, Eugene Onegin. Prerequisite: ENGL 102 and ENGL 200.

ENGL 300 ***History of the English Language*** *(3) [H], [O]*

The structure of present day English is radically different from that of Old and Middle English. This course explores the stages through which the English language has evolved to reach its present form. This course will also examine the structure and social meanings of colonial varieties of English. Sophomore standing or permission of instructor. Prerequisite: ENGL 102.

ENGL 301 ***Literature and Film*** *(3) [H], [O]*

Involves viewing a variety of films and formulating critical responses. Students will demonstrate in their own responses to film their ability to use effectively the critical language and methodology of film criticism in its varied aesthetic, historical, and ideological forms. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 302 ***Medieval Literature (500-1500)*** *(3) [H]*

This course provides students with a foundation in literature from the medieval period in England. Students will encounter some of the earliest recorded poems and writings in English across a number of genres and forms, including legends and fables, epics and myths, and more. Pre-requisite: ENGL 200 and Co-requisite: ENGL 220 or 221.

ENGL 303 ***English Poetry and Prose: 1500-1660*** *(3) [H]*

Examines Renaissance literature and its continuing impact on the world, with attention to the cultural, social, historical and religious factors in the development of arts and letters in English. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 304 ***English Poetry and Prose: 1660-1800*** *(3) [H]*

Explores the English Enlightenment, the Restoration, and the Age of Reason, with an emphasis on the rise of technology and technological culture and the impact of science and scientific methodology on art and literature. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 305 ***Professional Writing and Communication*** *(3) [H]*

Explores professional approaches to communication in today's global business environment. Also focuses on principles and practices needed for effective internal and external business communication (memos, letters, reports, proposals and presentations). Students evaluate case studies in business and use appropriate style-guides to document sources. Prerequisite: ENGL 102.

ENGL 307 ***Shakespeare*** *(3) [H]*

Explores the original socio-historical context of Shakespeare's works, as well as their continuing impact on literature around the globe. Students will undertake an intensive study of selected comedies, tragedies, history plays, and Shakespeare's sonnets. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 308 ***Early American Literature*** *(3) [H]*

Studies early American literary forms, writers, and intellectual life up to the rise of Transcendentalism in the 19th century, considering historical, cultural, and social changes. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 309 ***19th Century British Literature*** *(3) [H]*

Examines major British literary texts from the Romantic and Victorian eras, presenting the relationship between each author's works and various historical and cultural developments, such as the Industrial Revolution and colonialism. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 310 ***19th Century American Literature*** *(3) [H]*

This course will examine major American literary texts written by American writers of the nineteenth century, including poetry and prose by Emerson, Poe, Dickinson, Thoreau, Stowe, Melville, Chopin, Whitman, Cooper, Douglass, Jacobs, Twain, Hawthorne, and other writers concerned with issues of gender, race, and social justice. The course presents the relationship between each author and his/her works and various historical and cultural developments, such as the Civil War and Abolition and Suffrage. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 311 ***English Novel*** *(3) [H]*

An examination of representative English novels from the beginning up to the Nineteenth Century. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 312 ***American Novel*** *(3) [H]*

An examination of representative American novels from the beginning up to the Nineteenth Century. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 314 ***Modernism/ Postmodernism*** *(3) [H]*

Investigates the trends in the intellectual and aesthetic movements that inform 20th- century Western ideas about art. Students look at various modernist trends such as an emphasis on impressionism and subjectivity, blurring and distinctions between genres, tendency toward fragmented forms and discontinuous narratives, and trace the continuation and / or rejection of these trends in postmodernism. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 315 ***20th Century American Literature*** *(3) [H]*

Examines the major trends in 20th- century U.S. literature, including artistic movements such as Naturalism, the Beats, the Harlem Renaissance and New Journalism, as well as literary responses to major historical events, such as the Great Depression, WW I and WW II, and major social movements of the second half of the century. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 319 ***Women and Literature*** *(3) [H], [O]*

Examines representations of women and womanhood in the work of female authors and the way in which those representations are culturally constructed. The course also offers an introduction of feminist theory and examination of the discourses of women writers. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 343 ***Poetry and Poetics*** *(3) [H]*

Offers a comprehensive study of poetry as a genre and introduces the art of poetics. The course explores various visual, rhythmic and performance aspects of poetry while covering a wide range of poets, styles, traditions, forms and subgenres. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 345 ***Creative Writing*** *(3) [H], [O]*

Involves the craft and practice of creative writing (short fiction, poetry and other types of writing) with extensive student writing throughout the semester. The course includes regular examination of professional models and the writing generated and revised by students. In addition, students are actively involved in developing AUK's arts and literary journal, the AUK Review. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 349 ***Literature in Translation*** ***(3) [G], [H]***

An aesthetic and cultural evaluation of non-English literature in translation (i.e., Arabic, French, German, Spanish, etc.), focusing on the poetry and fiction of non-English authors. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 355 ***Contemporary World Literature*** ***(3) [G], [H]***

Explores the ways in which contemporary literature responds to the complex realities of our world, featuring writing from a variety of national literatures. Prerequisite: ENGL 200. Co-requisite: ENGL 220 or ENGL 221.

ENGL 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: ENGL 102.

ENGL 375 ***Rhetorics of Cultural Dissonance*** ***(3) [G], [H]***

Examines the ways in which language creates, reflects, and transforms cultural identity and beliefs and consequently our understanding of local and global relations of power. Through analyses of the contexts from which ideas about identity and culture emerge, students develop a greater understanding of the origins of conflict between and within "East" and "West" and "North" and "South." Sophomore standing or permission of instructor. Prerequisite: ENGL 102.

ENGL 376 ***Language in the Arab World*** ***(3) [H], [K]***

Introduces students to the sociocultural dimensions of language in the Arab World in relation to national identity, discussing diglossia, code-switching and language variation. Also examines patterns of colonization and explores the widespread use of English in the Arab World and the possible consequences on language planning, literacy development and evolution of Modern Standard Arabic (MSA). Prerequisite: ENGL 102.

ENGL 378 ***English and Globalization*** ***(3) [G], [H]***

Explores social, political, linguistic and educational issues related to the spread of English in the world. The effects of colonialism and the role of globalization in the emergence of English as an international language are examined. There is also a focus on the variation in structure of different varieties of English. Prerequisite: ENGL 102.

ENGL 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: ENGL 102.

ENGL 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Prerequisite: ENGL 200. Concurrent: ENGL 220 or ENGL 221.

ENGL 400 ***Seminar on British Authors*** ***(3) [H], [Z]***

An in-depth study of the work of a significant British author or a small group of authors. The study includes the historical and social context, the author's thematic approach and his/her contribution to literature and society. Junior Standing and Permission of Instructor. Prerequisite: ENGL 220 and ENGL 221.

ENGL 401 ***Seminar on American Authors*** ***(3) [H], [Z]***

An in-depth study of the work of a significant American author or a small group of authors. The study includes the historical and social context, the author's thematic approach and his/her contribution to literature and society. Junior Standing and Permission of Instructor. Prerequisite: ENGL 220 and ENGL 221.

ENGL 402 ***Seminar on History of Theatre and Drama*** *(3) [H], [Z]*

A comparative study of major theatrical works and theories of drama and performance from ancient Greece and the Near East to the modern era, with a focus on works representative of distinct periods and schools of theater and drama. Junior Standing or Permission of Instructor. Prerequisite: ENGL 220 and ENGL 221.

ENGL 405 ***Seminar on Postcolonial Literature*** *(3) [H], [Z]*

Discussion of literature from former British colonies in Asia, Africa and the Caribbean and from postcolonial diasporas. Emphasis is placed on the common experience of a postcolonial condition across various regions. Orientalism, or the stereotyped image of the East portrayed in representative texts, is a primary theme. Junior Standing and Permission of Instructor. Prerequisite: ENGL 220 and ENGL 221.

ENGL 406 ***Seminar on Ethnic American Literature*** *(3) [H], [Z]*

Focuses on the critical study of literature written by diverse ethnic American authors from colonial to contemporary times. It may include works by African-, Arab-, Asian-, European-, Hispanic-, and Native Americans. Junior Standing and Permission of Instructor. Prerequisite: ENGL 220 and ENGL 221.

ENGL 415 ***Literary Theory and Criticism*** *(3) [H]*

Introduces the conceptual nature of literature, the relationship between literature and criticism and the establishment of literary canons; examines approaches such as formalism, structuralism, post-structuralism, deconstruction and reception theory, post-colonialism, and the respective historical contexts of each. Required for al English majors. Prerequisite: ENGL 220 and ENGL 221.

ENGL 450 ***Senior Seminar*** *(3) [H]*

This capstone course is the culminating opportunity for English majors to demonstrate skills of literary interpretation, critical thinking, research and analytical writing. Widely varied topics are addressed in the context of current critical discourse. Students are required to make a scholarly presentation and write a long research paper. Co-requisite: ENGL 415

ENGL 470 ***Internship in English Language and Literature*** *(1 - 3) [H], [Z]*

An internship experience with the requirement that the student write a report summarizing what the internship job added to his to her knowledge of English Language and Literature. Students are limited to a maximum of 6 internship credit hours. This is a pass/fail course. Junior standing and successful completion of application process. . Prerequisite: minimum GPA of 2.5 and: ENGL 102.

ENGL 485 ***Senior Thesis*** *(3) [H], [Z]*

English majors apply their writing abilities, research skills, and knowledge in an independent study project. Senior standing and permission of instructor. Prerequisite: ENGL 220 and ENGL 221.

Engineering (ENGR)

ENGR 200 ***Engineering Design*** *(3)*

An overview of engineering as a profession, ethics in engineering, team work, reporting, engineering graphics and communication skills for an engineer, reverse engineering, design and build a project, engineering modeling, cost-benefit tradeoffs, product design and performance, business and career planning, and professional practice.

ENGR 210 ***Engineering Entrepreneurship I*** *(3)* *[G]*

This course introduces students to Entrepreneurship in Engineering disciplines via investigating the key entrepreneurial area of: (a) intellectual property, its protection and related strategies; (b) evaluating the market viability of new High-Tech and/ or Engineering ideas; (c) shaping these ideas into the right products or services for the right markets; (d) developing strategies for High-Tech/ Engineering product positioning, marketing operations; (e) acquiring the resources needed to start a new venture, e.g., people, financing, strategic partners, etc.; and (f) leadership roles for the founders of High-Tech/ Engineering ventures. Perquisite: MGMT 201.

ENGR 300 ***Engineering Ethics*** *(3)*

This course aims at introducing the students to the engineering profession and engineering ethics. As engineering students learn how to design and implement complex systems and take part in the development of their communities, various ethical quandaries and challenges arise. Typical examples of these challenges are related to plagiarism, authorship, intellectual property, and conflict of interest. Resolutions will be required to warrant proper conduct of the engineering profession. The course provides students with essential background on ethical theories and enlightens them on how to deal with unusual engineering issues without undermining the ethical standards. The students knowledge will be enriched by citing general ethical codes recognized worldwide by professional societies. Prerequisite: ENGL 102.

ENGR 310 ***Engineering Entrepreneurship II*** *(3)*

This course investigates the key elements of planning an entrepreneurial High-Tech and/ or Engineering ventures, including: (a) defining the ventures industry and market; (b) developing strategies for High-Tech/ Engineering product positioning, marketing, distribution, sales, operations, management and development; (c) preparing a financial plan; and (d) dealing with global, regional, and local case studies. Effective written and verbal presentation skis are emphasize throughout the course. Perquisite: ENGR 210.

ENGR 330 ***Engineering Economics*** *(3)*

Provides knowledge of economic consequences of engineering decision processes, and methods for evaluation of engineering design alternatives in terms of costs and benefits. Topics include time equivalence of money, annual cost method, present worth method, rate of return method, depreciation, benefit/cost, break-even analysis, income taxes, equipment replacement, and risk analysis. Sophomore standing or permission of instructor. Prerequisite: MATH 203.

ENGR 340 ***Engineering Project Management*** *(3)*

Covers tools and techniques used in managing engineering projects. Identifying and selecting projects; proposal and contracts. Defining scope, quality, and responsibility. Scheduling, resource utilization, budgeting, and risk management. Managing project teams, progress and performance measurement and evaluation. Case studies. Use of project management Software. Prerequisite: STAT 214 or STAT 203 and MGMT 201.

ENGR 340L ***Eng. Pro. Management Lab*** *(1)*

A laboratory component for the course ENGR 340 Engineering Project Management. The lab syllabus is aligned with the course topics. Concurrent: ENGR 340.

ENGR 369 ***Short Course*** *(1 - 3)*

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ENGR 388 ***Independent Study*** *(1 - 4)* *[Z]*

Can be repeated for credit with a different topic. Permission of instructor.

ENGR 389 ***Special Topics in Engineering*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Entrepreneurship Studies (ENTR)

ENTR 201 ***Principles of Entrepreneurship*** ***(3)***

The philosophy, motivation and characteristics of entrepreneurship. Social, psychological, economic, and business factors in the success and failure of entrepreneurship; the entrepreneur; identifying and evaluating entrepreneurial opportunities; planning and developing a new business venture; managing the new venture; applications to creation and management of stand-alone ventures and those developed within corporations. Prerequisite MGMT 201.

ENTR 301 ***Intermediate Entrepreneurship*** ***(3)***

Study of the nature and special conditions related to proprietorships, partnerships and small business enterprises. Sophomore standing or permission of instructor. Prerequisite: ENTR 201.

ENTR 313 ***Managing Entrepreneurial Ventures*** ***(3)***

This course uses a managerial approach to develop understanding of the risks and rewards associated with entrepreneurial activities, and build necessary skills to manage a business start-up. Students will generate a viable business idea, conduct a feasibility analysis and prepare and present a comprehensive business plan. The focus will be on Kuwait and MENA. Prerequisite: ACCT 205, FINC 232 and MRKT 200.

ENTR 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ENTR 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ENTR 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

ENTR 470 ***Internship in Entrepreneurship*** ***(1 - 3)*** ***[Z]***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of entrepreneurship and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credit hours overall. This is a pass/fail course. Senior standing and permission of instructor. Prerequisites: ENTR 201 and a minimum GPA of 2.25.

Environmental Studies (ENVS)

ENVS 101 ***Introduction to Environmental Studies*** ***(3)*** ***[S], [X]***

Introduction to the major issues and themes within the field of Environmental Studies. Topics may include endangered species, air/water pollution, energy, global warming, environmental law/ justice, ethics and policy.

ENVS 215 ***Environmental Data Analysis*** ***(3)*** ***[S]***

This course will introduce students to statistics, data analysis, and probability to be able to evaluate and interpret environmental

data. Topics will include: Statistics and data analysis; Frequency tables, bar charts, mean, standard deviation, and skewness; Linear regression; and Probability. Prerequisite: MATH 095.

ENVS 220 ***Energy and the Environment*** ***(3)*** ***[S]***

Study of key physics principles as related to environmental issues, including: Energy forms; Energy recourses and conversions; Past and present patterns of energy use; Projection of future demand and supplies of energy; Role and method of physics in fostering rational evaluations of environmental problems and in searching for potential solutions; Resources and technologies of future energy alternatives. Prerequisite: PHYS 101 or PHYS 105.

ENVS 230 ***Environmental Geology*** ***(3)*** ***[P]***

Fundamental earth science concepts are used to assess the impact of increasing global population and development on earth's natural resources and also examine how natural processes affect human activities. Topics include volcanic eruptions, earthquakes, flooding, tsunamis, soil erosion, landslides, stream flooding, and rock-falls.

ENVS 305 ***Environmental Health*** ***(3)*** ***[P]***

An overview of environmental issues affecting human health and survival. Students will be introduced to biological and chemical toxins in the general environment, environmental epidemiology, and relevant environmental regulations. Attention will be paid to environmental issues at home, in work settings, the community, and in the global context. Sophomore Standing or permission of instructor. Prerequisite: BIOL 105.

ENVS 310 ***Environmental Ethics*** ***(3)*** ***[S]***

This course examines normative issues in the study of the environment. Students will learn basic ethical concepts and theories and how to apply them to specific environmental concerns. Students will be asked to develop arguments to defend their own respective views regarding the environment and to develop viewpoints reflecting thoughtful and scholarly consideration of human duties, both individual and social, to the environment. Sophomore standing or permission of instructor. Prerequisite: ENGL 101. [Cross-listed with PHIL 310]

ENVS 320 ***Global Environmental Policy*** ***(3)*** ***[S]***

A course that seeks to provide a broad overview of the key concepts, actors, and issues related to global environmental policy. This course outlines the evolution of environmental policy in facing global environmental challenges and how such policies have become inherently intertwined with government policy and business practice. Junior or senior standing.

ENVS 325 ***Health, Environment & Armed Conflict*** ***(3)*** ***[S]***

This class explores the interrelationship between health, the natural environment and armed conflict. It does so by focusing on conflict over access to and use of the environment as well as examining ideas about "health" in various parts of the world. Sophomore standing. Prerequisite: ENVS 101.

ENVS 340 ***The Gendered Environment*** ***(3)*** ***[S]***

This multidisciplinary course affords students the opportunity to become familiar with the key debates and theoretical approaches involved in understanding environmental issues from a gender and justice perspective. Sophomore standing. Prerequisite: ENVS 101.

ENVS 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

ENVS 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

ENVS 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Finance (FINC)

FINC 232 ***Financial Management*** ***(3)***

This course introduces students to the core principles of financial management essential for making informed business decisions. Topics include the role of managerial finance, the financial markets environment, valuing firms' performance, time value of money, valuation of financial securities, valuation of risk and return on investment, cost of capital and capital budgeting.
Prerequisite: ACCT 201 and MATH 103 or 110 or 201.
Concurrent: ENGL 102.

FINC 332 ***Financial Management I*** ***(3)***

Financial statement analysis, pro forma financial statements, time value of money, discounted cash flow, stock and bond valuation, net present value. Sophomore standing or permission of instructor. Prerequisites: MATH 103 or MATH 110 or MATH 201, and ENGL 102 and ACCT 201.

FINC 341 ***Corporate Finance*** ***(3)***

This course focuses on the principles and practices of corporate finance and financial decisions made by businesses. Students will explore topics such as capital structure, capital budgeting, capital budgeting and risk refinements, leverage and capital structure, dividend policy, working capital management. The course emphasizes analytical tools and frameworks for evaluating investment opportunities and optimizing financial performance.
Prerequisites: FINC 232 and BUS 209.

FINC 343 ***Financial Services Management*** ***(3)***

The course will focus on operations in financial services management including applications of competitive strategies and explorations of opportunities in various financial services sectors including banking, insurance, and personal finance planning. The course will also examine this sector in the context of the Kuwait financial services companies. Prerequisite: FINC 232 and BUS 209.

FINC 345 ***Investments and Security Analysis*** ***(3)***

This course provides a thorough exploration of investment analysis with a focus on securities. Students will learn key concepts such as valuation methods and techniques, analysis of stocks and bonds. The course emphasizes both qualitative and quantitative methods for assessing investment opportunities, understanding market trends and managing risk. Through practical application students will develop the skills necessary to Informed investment decisions, preparing them for careers in asset management investment banking and financial advisory.
Prerequisite: FINC 232 and BUS 209.

FINC 350 ***Islamic Banking and Finance*** ***(3)***

In this course students will be introduced to Islamic law pertaining to financial issues and comparison with conventional financial and banking systems. Topics Include: Islamic perspectives on finance and banking, riba (interest), finance-based products securitization, bonds and insurance, and risk sharing. Prerequisite: FINC 232 and BUS 209.

FINC 355 ***Financial Institutions of the Gulf*** ***(3)***

The course focuses on the financial markets and institutions, it explores their roles in the global economy. It examines the structure and functioning of various financial markets including money markets, equity and debt markets. Through case studies and real-world applications, students will gain insights into how financial decisions impact economic stability and growth equipping them with analytical skills needed for career in the financial industry. FINC 232 and BUS 209.

FINC 365 ***International Finance*** ***(3)***

This course examines the financial management in a global context. Students will explore key topics such types of international monetary systems, balance of payments concepts and accounting, corporate governance, foreign exchange markets, transaction and economic exposures, capital flows and impact of global economic events on financial decisions. The course emphasizes the strategic considerations businesses face when operating across borders, including currency risk management and international investment strategies. Prerequisites: FINC 232 and BUS 209.

FINC 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Junior standing.

FINC 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Junior standing.

FINC 389 ***Special Topics*** ***(3)***

An analysis of contemporary issues in Finance. Can be repeated for credit with a different topic. Junior standing.

FINC 413 ***Finance Capstone: International Finance, Financial Markets and Institutions*** ***(3)***

Students will apply finance theory into practice; integrate a wide range of analytical skills; and consider capital structure, mergers and acquisitions, corporate governance, and other contemporary issues. Students will apply tools, techniques and approaches that support decision-making in corporate finance and investment settings. Prerequisite: FINC 341.

FINC 445 ***Portfolio Management*** ***(3)***

This course focuses on the principles and techniques of efficient portfolio management, equipping students with the skills to construct and manage investment portfolio. Key topics include asset allocations, diversification, risk assessment and the use of financial instruments. Students will learn to analyze market trends and investment opportunities, applying quantitative methods and strategic frameworks to optimize portfolio performance. Prerequisites: FINC 332 and FINC 341 and FINC 345.

FINC 470 ***Internship in Finance*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of Finance and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

French (FRNC)

FRNC 101 ***Introduction to French I*** ***(3)*** ***[H], [X]***

The course is designed for beginners. The objective of this course is to provide students with necessary skills in oral and written communication. The course is almost entirely taught in French.

FRNC 102 ***Introduction to French II*** *(3) [H], [X]*

This course continues to reinforce communication skills with more emphasis placed on reading and writing texts. It will develop the ability to communicate with accurate pronunciation and intonation. Students will be exposed to French culture with the use of video and other authentic material. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: FRNC 101 or permission of instructor.

FRNC 201 ***Intermediate French*** *(3) [H]*

This course focuses on active communication skills, while working on spontaneous conversations related to daily-life topics. More emphasis is placed on writing and using a variety of formats with increasing control of grammar. Students will perfect their knowledge of French society through reading newspaper articles and literary texts. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Prerequisite: FRNC 102 or permission of instructor.

FRNC 202 ***Intermediate French II*** *(3) [H]*

While still focusing on oral communication, more emphasis will be placed on reading short texts and writing short paragraphs. Students will develop a strong knowledge of French grammar (verbs in present, past, future and subjunctive), and a strong vocabulary base. Prerequisite: FRNC 201 or permission of instructor.

FRNC 333 ***Language and Civilization*** *(3) [H]*

An advanced language course that improves student's oral, reading, and writing skills through an examination of French society. Themes covered include family, education, arts, gastronomy, politics, and immigration. Class discussions will be based on literary readings, articles from French newspapers internet materials, songs, a selection of French films, and field trips. Sophomore standing and permission of instructor.

FRNC 369 ***Short Course*** *(1 - 3)*

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

FRNC 388 ***Independent Study*** *(1 - 3) [Z]*

Can be repeated for credit with a different topic. Permission of instructor.

FRNC 389 ***Special Topics*** *(3)*

Can be repeated for credit with a different topic. Permission of instructor.

FRNC 399 ***French Study Abroad*** *(1 - 3) [Z]*

Can be repeated for credit with a different topic. Permission of instructor.

Graphic Design (GDES)

GDES 110 ***Digital Foundations*** *(3) [O]*

This course introduces students to fundamental principles and applications of design, emphasizing critical and cultural awareness of design issues and developing of technical skills. The notion of creative problem solving is particularly emphasized. Students develop expertise in major industry standard software packages. This course lays the foundation for further study of design. A lab fee may be required. [Cross-listed with COMM 110]

GDES 150 ***Introduction to Time Based Media*** ***(3)***

This course introduces students to the fundamental principles and tools of time-based media and serves as a foundation for upper-level multimedia courses offered in the department. Prerequisites: GDES/COMM 110.

GDES 204 ***Digital Photography I*** ***(3)***

This course provides an introduction to digital photography and digital camera operations, covering lighting, composition, exposure and the fundamentals of traditional photographic concepts. Students will use digital cameras to take photos that meet the requirements of a series of assignments designed to develop specific skills, and stimulate the students' creative capacities for personal expression, communication and self-understanding. Prerequisite: GDES 150.

GDES 208 ***Film Production I*** ***(3)***

Introduces students to basics of cinematic storytelling through narrative genres and documentaries. Examines the basics of script-writing, directing, cinematography, and editing. Develops skills in all areas of the craft, and explores both the creative and the technical aspects of production. Includes a short project. Familiarizes students with the nature of filmmaking through lectures and working experiments with traditional narrative filmmaking, documentary, and new media. [Cross-listed with COMM 208]

GDES 220 ***Graphic Design I*** ***(3)*** ***[H]***

An introductory course to the field of graphic design and visual problem solving. Students will learn basic design principles and elements of design, composition, form, typography, and the historical context is introduced in this course. Provides practical experience in essential studio processes and procedures, critiques, and group discussions. Pre-requisite: GDES 110 or COMM 110 and ART 120 Concurrent: ART 121.

GDES 221 ***Typography I*** ***(3)*** ***[H]***

An introduction to typography as both language and tool, one through which a graphic designer can communicate visual hierarchy, verbal information, form, and meaning. This course explores type design, the study of letterforms, an introduction to the historical and modern development of the alphabet, and the study of grid structures. Pre-requisite: GDES 110 or COMM 110 and ART 120 Concurrent: ART 121.

GDES 242 ***Digital Imaging I*** ***(3)***

This course enhances student capabilities in digital image manipulation, vector graphics creation, layout design and time-based media. A lab fee may be required. Pre-requisites: GDES 110 or COMM 110.

GDES 260 ***Illustration I*** ***(3)***

This introductory course provides students a foundation in the practices and materials of illustration. Students will address visual communication strategies and solutions through hand- rendered and digital illustrative means. Prerequisites: GDES 110 and ART 121.

GDES 304 ***Digital Photography II*** ***(3)***

This course provides students with the opportunity to create advanced digital photography using sophisticated lighting, composition, and exposure techniques. Students explore traditional and experimental photographic concepts to better understand their own photographic vision. Pre-requisite: GDES 204.

GDES 320 ***Graphic Design II*** ***(3)***

This intermediate studio course is a comprehensive study of graphic design through the integration of typography and imagery; from topic selection to research; and from concept building to the visualization of content. Students will enhance layout skills,

and work with alternative materials. Class time will be devoted to lectures, projects and critiques will be developed. Permission of Instructor (E- Portfolio mid-review). Prerequisite: GDES 220 and GDES 221.

GDES 321 ***Typography II*** ***(3)***

This course further explores the sequence of type-oriented assignments and projects; students explore a variety of advanced functional and formal typographic issues. Perceptual, emotional, and stylistic considerations of typographic usage are also covered. This is a studio course. Prerequisite: GDES 220 and GDES 221.

GDES 330 ***Print Production*** ***(3)***

This course explores the various printing technologies currently available for graphic designers, with an emphasis on the Off-Set printing process. Pre-press, printing, post-production, and all the supporting services offered by printing houses, will be thoroughly investigated throughout this course. Prerequisites: GDES 220 and GDES 221.

GDES 337 ***Environmental Design*** ***(3)***

A studio course that explores way finding, storytelling, exhibit and information design in built and natural environments. Students will learn how to use the blend of two and three-dimensional design to move people and/or vehicles through spaces. Projects may include the study of zoos, museums, sport complexes, hospitals, or airports. Junior standing. Prerequisite: GDES 320.

GDES 342 ***Digital Imaging II*** ***(3)***

Inspiration and storyboard are challenged to push the envelope of the traditional parameters expected during Image Production. The students blend different styles to produce aesthetically sound pieces. Different Image tracks may be chosen to focus on for the majority of the semester. A lab fee may be required. Prerequisite: GDES 242.

GDES 351 ***Web Design*** ***(3)***

This course explores the process of designing and building web sites, as well as creating graphics, animations and rich content for the web. It also incorporates lectures relating to Internet issues and the different web-based media forms being utilized those days. Prerequisite: GDES 150 or Permission of Instructor.

GDES 361 ***Illustration I*** ***(3)***

This introductory course provides students a foundation in the practices and materials of illustration. Students will address visual communication strategies and solutions through hand- rendered and digital illustrative means. Prerequisites: ART 121 and GDES 110 and GDES 220.

GDES 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

GDES 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

GDES 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

GDES 404 ***Professional Practice*** ***(3)***

The course is designed to prepare students for professional practice in graphic design. It is a guide to business aspects of design including best practices in business processes, self-promotion, negotiation and pricing, ethical standards and the designer's responsibility of practice. Prerequisite: GDES 320.

GDES 420 ***Graphic Design III*** ***(3)***

This advance course further investigates system design, research analysis and development of a brand. Students will work in a collaborative environment, in an intense investigation of visual communication, critique session, group discussions, presentations and field trips. This is a studio course. Senior standing. Prerequisites: GDES 320 and GDES 321.

GDES 421 ***Typography III*** ***(3)***

This advance course further investigates typographic form, history, hierarchy, context and sequence of information using image and type relationships. Lectures, critiques and individual in-class explorations are used to further these ideas. This is a studio course, senior standing. Prerequisites: GDES 321 and GDES 320.

GDES 452 ***3D Modeling and Animation*** ***(3)***

This course will introduce principles and techniques used for creating three-dimensional content in virtual space. Students will learn principles of model creation, texture manipulation, scene rendering and animation to enable them to conceptualize and produce meaningful and artistic visualizations. The class will also explore the implications of the work produced as students engage in mutual critique. A lab fee may be required. Junior Standing. Prerequisite: GDES 150.

GDES 453 ***Motion Graphics*** ***(3)***

In this advance level course, students experiment their learning outcomes on form and content through manipulation of movement, time, sequence and sounds. Students will learn and create visual effects, wide range of application in broadcast, film and video based communication. This is a studio course. Prerequisite: GDES 150 and GDES 242.

GDES 463 ***Illustration II*** ***(3)***

This advanced course in illustration further investigates the conceptual relationship between text and image. Students will develop complex projects for existing and emerging markets through a variety of digital and analog media. Prerequisite: GDES 361.

GDES 470 ***Internship in Graphic Design*** ***(1 - 3)***

The GDES Internship provides students the opportunity to work in career-related fields for academic credit. A creative paper submission is expected upon the completion of the internship. Students are limited to a maximum of 6 internship credit hours of which only 3 count toward the degree requirement. This is a pass/fail course. Junior standing and permission of instructor.

GDES 490 ***Capstone*** ***(3)***

The Capstone course is designed to teach GDES students how to visualize the complex intersection between personal voice, conceptual understanding, and the use of research for a graphic design exhibition. The course is largely self-directed and students are expected to select and investigate a topic using design as a means to present their findings. Pre- requisite: GDES 420.

General Education (GENE)

GENE 101 ***Information Literacy*** ***(2)*** ***[R]***

In this course, students will learn about basic principles of information literacy and how to apply this knowledge in scholarly research. Students will develop their strategic searching skills to retrieve both scholarly and non-scholarly sources as well as to evaluate their credibility. This class will have an emphasis on using library resources as well as the open web. Students will apply these skills in the classroom and also study case-studies exemplifying the concepts described in the classroom.

GENE 102 ***Critical Reasoning*** ***(3)*** ***[R]***

To think philosophically is to think critically, which means to doubt, to question and to ask for evidence before accepting anything as true. The course aims at equipping the students with the skills of critical evaluation of arguments and with a capacity for a thoughtful analysis of textual material. It focuses on the methods of sound philosophical reasoning which allows the students to make reasoned judgments on the quality of various argumentative passages and encourages to express and defend their own views in a precise, coherent and clear manner.

GENE 103 ***Public Speaking*** ***(3)*** ***[R]***

Teaches the principles of public speaking in large and small group environments with emphasis on audience analysis, research and evidence, reasoning, rhetoric, organization and delivery. Through analyzing professional speeches and their effectiveness, the student practices the most common speech types: impromptu, informative, and persuasive. A grade of "C-"or better must be earned to pass this course.

GENE 104 ***Scientific Inquiry*** ***(3)*** ***[P]***

Science is both knowledge and process. In this general course students will learn more about how scientists proceed in a scientific enquiry, how science is communicated to a general audience, and how collaboration can lead to major scientific advancements. Students will also be introduced to the critical analysis of preexisting information presented to the public as science in various disciplines. When competing the course, students will have a better understanding of the scientific inquiry and its underlying quantitative reasoning.

General Science (GSCI)

GSCI 100 ***Introduction to Sciences and Technology*** ***(1 OR 3)*** ***[P]***

This course is designed to provide foundational knowledge in the Sciences and foster an appreciation of modern technologies that play a role in everyday life. Topics vary and may include biology, chemistry, electronics, physics, nanotechnology, renewable, energy technologies, satellite imaging and global positioning systems, and others.

Health and Fitness (HFIT)

HFIT 101 ***Introduction to Health and Wellness*** ***(1)*** ***[F]***

An introduction to the physiological, social, and psychological factors in life-long health and fitness; self-responsibility for total wellness. Introduction to wellness concerns such issues as disease prevention, stress management and behavioral and mental health. Occasional.

HFIT 103 ***Nutrition and Health*** ***(3)*** ***[F]***

An analysis of the role and value of nutrition in maintaining health, mental health, and physical fitness; diet and nutrition; special needs of overweight and underweight individuals; food mythologies.

HFIT 110 ***Physical Activity*** ***(1)*** ***[F]***

This course offers students an opportunity to participate in physical activities/sports such as aerobics, yoga, basketball, soccer, volleyball or other physical activities. Occasional.

History (HIST)

HIST 105 ***World History Since 1900*** ***(3) [G], [S]***

Examines key political, social, and cultural developments around the world in the 20th century, with emphasis on how ideas and ideologies have both shaped and been shaped by major historical events. Topics include the two world wars, revolutions, the Cold War, decolonization and global social change.

HIST 110 ***Twentieth Century Middle East*** ***(3) [B], [S]***

Examines key events and trends in the Middle East in the twentieth century. Topics include ideologies and practices of colonial control, Arab nationalism, the emergence of new social class post-colonial, nation building, the Arab Israeli conflict, the Iranian revolutions, and the Gulf Wars.

HIST 201 ***History and Politics of Kuwait*** ***(3) [B], [S]***

Provides an introduction to the political, economic and social history of Kuwait. Topics include relations with the Ottoman and British Empires, the pre-oil maritime economy, oil modernization, the constitution, modern state-building, and the Iraqi invasion.

HIST 202 ***History and Politics of the Iranian World*** ***(3) [G], [S]***

Reviews the historical and political development of the Iranian world since the advent of Islam in the 7th century. Topics include the emergence of modern Iran as a national state, and the advent of Shi'sm as the state religion in the 16th century.

HIST 204 ***European History until the French Revolution*** ***(3) [G], [S]***

Examines the major themes of European history before the French revolution. Topics include ancient Greece and Rome, the rise of Christianity, the High Middle Ages, the Renaissance and Reformation, the wars of religion , the rise of independent states and overseas expansion.

HIST 205 ***History of Modern Europe*** ***(3) [G], [S]***

Analyses the development of European social, political and economic history from the French and industrial revolutions to the twentieth century. Topics include the rise of absolutism, the Enlightenment and democratic revolutions, industrialization and the emergence of liberalism , capitalism and socialism , the two world wars and the Cold War.

HIST 221 ***Survey of Gulf History*** ***(3) [G], [S]***

Examines key issues in the politics and society of the Gulf region before and after the discovery of oil which emphasis on themes of regional unity versus political fragmentation. Topics include the region's maritime history, British imperialism, oil modernizations state building and regional politics after independence.

HIST 289 ***Topics in World History*** ***(3) [S]***

Analyses the rise and development of the modern world from various regional and temporal perspectives. Topics will vary. Can be repeated for credit with different topic.

HIST 305 ***History of the Islamic World 622-1800*** ***(3) [S]***

Survey of Islamic political, social, and intellectual history from the time of the Prophet until 1800. It offers an introduction to the doctrines of Islam and Islamic institutions, influential historians, and covers major themes and disciplines that have informed the writing of Islamic history and their relation to law, theology, politics, ethics, and science. Sophomore standing.

HIST 307 ***Arab History in the late Ottoman Period: 1800-1922*** ***(3)*** ***[S]***

History of the modern Arab world beginning with the 1798 Napoleonic invasion of Egypt and ending with the 1923 Treaty of Lausanne. The course covers the decline of the Ottoman Empire in the Arab provinces, the rise of the European imperialism, Mohammed Ali, Arab integration into global capitalism, and the rise of pan-Islamism, pan-Arabism, and Arab-Nationalism. Sophomore standing.

HIST 309 ***Twentieth Century Arab History*** ***(3)***

Contemporary Arab history including European colonialism, struggles for independence, Zionism and the colonization of Palestine, Arab nationalism, Arab socialism, rise of oil revenues, the rise of political Islam, and current conflicts in the region. Sophomore Standing.

HIST 311 ***Ottoman History (1400-1923)*** ***(3)*** ***[S]***

The course covers the early history of Ottoman growth and expansion, institutions and bureaucracy, the development of the devshirme and the janissary corps, responses to European expansion and intervention, the Tanzimat reforms, the question of Ottoman "decline," the rise of Turkish and other nationalisms, and WWI and imperial disintegration. Sophomore standing.

HIST 317 ***Topics in English / British History*** ***(3)*** ***[S]***

Explores the history of England and Britain from diverse perspectives. Topics may include Parliament, Common Law, the civil war, the question of kingship, the conflict of church and state, Constitutional monarchy, the Industrial Revolution, the growth of the British Empire, 20th century conflicts, globalization, and the creation of the United Kingdom. Sophomore Standing.

HIST 319 ***The British Empire*** ***(3)***

The rise, structure, and dynamics of the British Empire with special emphasis on its policies, actions and impact on India, the Arabian Peninsula and the rest of the Middle East. Prerequisite: Sophomore Standing.

HIST 322 ***World Economic History*** ***(3)***

Examines the world economic history of last millennium from a global approach. Addresses the British Industrial Revolution and its diffusion, the impact of Western Imperialism, global economic growth, and environmental constraints on Europe, North America, China, and India. Concludes with problems and challenges of globalization. Pre-requisite: IR 202 and IR 206 or Permission of Instructor.

HIST 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

HIST 383 ***The Reign of Shaikh Mubarak 1896 - 1915*** ***(3)***

This course examines the reign of Shaikh Mubarak Al-Sabah, founder of modern Kuwait 1896-1915. The course will focus on the formative political and social events and developments in the context of regional and international changes which shaped Kuwait's history during the late 19th and early 20th centuries. Prerequisite HIST 201 and Sophomore Standing.

HIST 384 ***History of Social Trends in Kuwait*** ***(3)***

This course introduces the major social trends in Kuwait history, since pre-oil period until the contemporary age of social media. It will examine the role of imported goods, food, cloths movement of people and ideas, and their impact on society's fashion, art, architecture, and lifestyle. It also introduces the various agents and conditions responsible for the development of social trends, as well as the rate of their diffusion and spread in society. Sophomore Standing.

HIST 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

A research and writing project to be determined in consultation with the instructor. Can be repeated for credit with a different topic. Junior Standing and Permission of Instructor.

HIST 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Sophomore Standing and Permission of Instructor.

HIST 401 ***Economic History: Twentieth Century*** ***(3)***

Historical investigation of economic development. Comparison of European and the Third World development. Junior Standing. Prerequisite: IR 202.

HIST 430 ***Oral History*** ***(3)***

A seminar that critically examines current issues via the method of oral history. Additionally, this seminar will enable students to apply methods of research and analysis from various university programs as they prepare for and analyze interviews. The course will involve participation in at least two oral history projects over the course of the semester. Prerequisite: COMM 101 or any HIST or AMST 100- or 200-level course.

Human Resources (HR)

HR 205 ***Human Resource Management*** ***(3)***

This course examines theories and practice of human resource management in local, regional, and global contexts. The course focuses on key aspects of human resources, planning, and their implications on public and/or business policy. It also studies major models that shape human resources development. Prerequisite: MGMT 201.

HR 305 ***Human Resource Management*** ***(3)***

This course presents potential leaders and managers the fundamental knowledge needed for an effective deployment of modern HRM practices in various business settings. The course builds and focuses on the theoretical knowledge of factors, elements and applications encompassed not only in the whole spectrum of the employment life cycle (recruitment and selection, training and development, performance evaluation, work design, compensation and employee relations) but also in strategic issues related to HR planning, ethics and workforce diversity, and international HRM. Prerequisite: MGMT 201.

HR 310 ***Recruiting and Staffing*** ***(3)***

Focus is on successful identification, recruitment, selection, and promotion of employees. Topics include external and internal recruitment, human resource planning, job analysis, and employee selection including testing and interviewing, as well as validation procedures. Prerequisite: HR 305.

HR 311 ***Total Rewards: Compensation*** ***(3)***

A variety of compensation methods are examined and their relationships to pay structures and employee performance. Topics include total compensation, design of pay levels, benefit options, job evaluation techniques, incentive plans and administration. Prerequisite: HR 205.

HR 320 ***Data Analytics for HRM*** ***(3)***

Organizations are increasingly leveraging HR analytics to enhance decision-making in human resources and, consequently, improve organizational effectiveness. This course aims to develop foundational HR analytics skills and enhance critical thinking

in relation to HR processes and data-driven decision-making. It will involve data analysis and statistical techniques, with a focus on practical application and real-world problem-solving. Prerequisite: BUS 109 and Concurrent: ENGL 102.

HR 325 ***Work and Well-being*** ***(3)***

Focus is on approaches to promoting well-being in the workplace. Topics include organizational health programs, career development, job satisfaction, safety, risk management, and labor relations. Prerequisite: HR 205.

HR 344 ***Managing Conflict*** ***(3)***

Develop conflict management skills to facilitate relationships in organizations. Prevention as well as management of disputes is covered on the individual, group, and organizational levels. The course takes a stakeholder approach. Prerequisite: HR 205.

HR 350 ***International HR Management*** ***(3)***

Focus is on managing human resources in international organizations. The course covers the context of international human resources management, globalization, and cross-border mergers and alliances. Emphasis is on international approaches to employee recruiting, staffing, development, performance management, and union relations. Prerequisite: HR 205.

HR 388 ***Independent Study*** ***(1 OR 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

HR 389 ***Special Topics*** ***(3)***

Topics vary by semester. Each offering provides students the opportunity to study a topic either not addressed in other HR courses or one previously addressed, but in greater depth. Prerequisite: HR 205.

HR 413 ***Human Resource Management Capstone*** ***(3)***

Focus is on an integration of human resource management techniques to develop a strategic perspective. The course emphasizes human resource development approaches and performance management systems aimed at achieving an effective interface with the external environment of organizations. Senior standing. Prerequisite: HR 205.

HR 470 ***Internship in Human Resources*** ***(1 OR 3)***

An internship experience with the requirement that the student writes a report summarizing what the internship added to his or her knowledge of Human Resource Management and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

Internship Free Elective- COMM (HUCM)

HUCM 473 ***Intern Free Elective -COMM*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly log and final report explaining what the internship added to the student's knowledge in an approved discipline.. A Pass/No Pass Course requiring Junior standing and permission of instructor. Prerequisite: Minimum GPA of 2.00.

Internship Free Elective- ENGL (HUEL)

HUEL 473 ***Internship for Free Elective Arts & Humanities*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly log and final report explaining what the internship added to the student's knowledge in an approved discipline. A Pass/No Pass Course requiring Junior standing and Permission of instructor. Prerequisite: Minimum GPA or 2.00.

Internship Free Elective- ARGD (HUGD)

HUGD 473 ***Intern for Free Elective-GDES*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly log and final report explaining what the internship added to the student's knowledge in an approved discipline. A pass/no pass course requiring junior standing and permission of instructor. Prerequisite: minimum GPA of 2.00.

Humanities (HUMN)

HUMN 100 ***Introduction to Humanities*** ***(1 OR 3)*** ***[H], [X]***

This course is a basic introduction to the study of the Humanities using an interdisciplinary approach. The course provides information relating to concepts, studies and facts in the Humanities. Topics vary and may include philosophy, architecture, literature, music, theatre, drama, religion, and/ or art.

Intensive English Program (IEP)

IEP L1A ***Receptive Skills 1*** ***(0)***

This course focuses on developing reading and listening skills necessary for success in the academic environment. Utilizing the lecture method, pair work, group activities, and student-instructor conferences, the student will be guided through methods of interacting with ideas contained within academic texts with a particular focus on comprehension skills in order to improve comprehension and retention of content. Successful completion of this course will prepare students for entry into IEP L2A Receptive Skills 2. Credit earned cannot be used for graduation. Prerequisite: Accuplacer LPT 62-85, WP 1-3. IELTS Ave. 4-4.5 (Reading 4-4.5, Writing 4-4.5), or TOEFL iBT Ave. 31-34 (Reading 3, Writing </= 11). Concurrent courses: IEP L1B.

IEP L1B ***Productive Skills 1*** ***(0)***

This course focuses on developing writing and speaking skills necessary for success in the academic environment. Utilizing the lecture method, pair work, group activities, and student-instructor conferences, the student will prepare short formal essays and presentations on academic topics and increase vocabulary, correctness, and fluency. Emphasis is on responding to text and reporting on observations as they relate to ideas contained within texts. Successful completion of this course will prepare students for entry into IEP L2B Productive Skills 2. Credit earned cannot be used for graduation. Prerequisite: Accuplacer LPT 62-85 or WP 1-3. IELTS Ave. 4-4.5 (Reading 4-4.5, Writing 4-4.5), or TOEFL iBT Ave. 31-34 (Reading 3, Writing < 11). Concurrent courses: IEP L1A.

IEP L2A ***Receptive Skills 2*** ***(0)***

This course focuses on extending and expanding reading and listening skills necessary for success in the academic environment. Utilizing the lecture method, pair work, group activities, and student-instructor conferences, the student will be refine and enhance methods of interacting with ideas contained within academic texts with a particular focus on comprehension skills in order to improve comprehension and retention of content. Successful completion of this course will prepare students for entry into credit-bearing freshman courses. Credit earned cannot be used for graduation. Prerequisite: Successful completion of IEP L1A or ACCUPLACER (LPT 86-105, ESL Write Placer 4-5), IELTS Ave. 5-5.5 (Reading 5-5.5, Writing 5-5.5), or TOEFL iBT Ave. 35-59 (Reading 4-12, Writing 12-13). Concurrent courses: IEP L2B.

IEP L2B ***Productive Skills 2*** ***(0)***

This course focuses on extending and expanding writing and speaking skills necessary for success in the academic environment. Utilizing the lecture method, pair work, group activities, and student-instructor conferences, the student will prepare longer formal essays and presentations on academic topics and increase vocabulary, correctness, and fluency. Emphasis is on responding to text and reporting on observations as they relate to ideas contained within texts. Successful completion of this course will prepare students for entry into credit-bearing freshman courses. Credit earned cannot be used for graduation. Prerequisite: Successful completion of IEP Level 1B or ACCUPLACER (LPT 86-105, ESL Write Placer 4-5), IELTS Ave. 5-5.5 (Reading 5-5.5, Writing 5-5.5), or TOEFL iBT Ave. 35-59 (Reading 4-12, Writing 12-13). Concurrent courses: IEP L2A.

International Relations (IR)

IR 101 ***Introduction to International Relations*** ***(3) [G], [S]***

Examines the role of the sovereign state in a complex and interdependent state system. Attention is paid to the global political economy; labor migrations; internationalization of communication; international environmental issues; monetary, financial and energy issues; patterns of conflict and cooperation; international and regional state organizations; and non-state political and social organizations.

IR 202 ***Trends in International Relations*** ***(3) [S]***

Examines the major schools of thought in international relations as they are understood in world politics today. Attention is paid top global political issues such as poverty, disease, trade, environmental degradation, human rights and terrorism. Prerequisite: IR 101 and MATH 095 or higher.

IR 206 ***International Political Economy*** ***(3) [S]***

Examines the interaction of markets and governments in the international system. Attention is paid to the impact of trade and production, the internalization of finance, security and information and communication technologies on the international system. Prerequisite: IR 101 and MATH 095 or higher.

IR 210 ***Methods of Research in International Relations*** ***(3) [S]***

Introduction to the scientific method, data gathering, research design, and quantitative and qualitative analysis. Explores the use of computer applications for international relations and comparative studies research. Develops analytical skills that students need as active consumers of research findings. Pre-requisite: IR 101 and MATH 095 or higher.

IR 306 ***Global Political Economy*** ***(3)***

Focuses on four major themes: globalization, global North-North relations; Global North-South; and Global South-South relations. Attention is paid to the Global East countries. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 206.

IR 307 ***IR of Arab States*** ***(3) [S]***

Historical and contemporary analysis of foreign policies of Arab states, as well as Intra-Arab state; Euro-Arab and East Asian-Arab states relations. Pre-requisite: IR 202 Concurrent: IR 210 or Permission of Instructor.

IR 309 ***Dynamics of Globalization*** ***(3) [S]***

Studies the causes and consequences of contemporary global transformations. Attention is paid to the opportunities and vulnerabilities created by globalization, and of the politics of ant-globalization movements.. Focuses on the question: Is globalization today unique, or part of a recurring pattern in world politics? Pre-requisite: IR 202 or Permission of Instructor.

IR 339 ***International Organizations*** ***(3)*** ***[S]***

Examines the origins, charters, organizational structure, activities, and performance of international organizations; the United Nations; the International Monetary Fund,; the World Bank; the World Trade Organization and others. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 210.

IR 341 ***Public International Law*** ***(3)*** ***[S]***

Studies the origins, sources, and subjects of International Law. Examines the role of the law in the international arena, insofar as it facilitates relations among states, resolves disputes, protects rights of individuals, allocates resources, and restricts conduct during wartime. Attention is paid to international law cases and their policy ramifications. Pre-requisite: IR 202 or Permission of Instructor.

IR 342 ***International Human Rights*** ***(3)*** ***[S]***

Examines the evolution of the modern human rights regime. Juxtaposes the Western origins of the human rights regime with competing, non-western systems of thought and practices of rights, and assesses in this context the universality of modern human rights norms. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 210.

IR 343 ***Terrorism & International Law*** ***(3)*** ***[S]***

Studies international law as it pertains to the study of terrorism. Examines the international law of war and international criminal law and the development of an international law of terrorism. Pre-requisite: IR 202 or Permission of Instructor.

IR 344 ***Politics of MNCs*** ***(3)***

Politics of multinational corporations (MNCs) discusses the emergence, nature, importance, and international impact of MNCs. Using case studies and the case study method, students will explore how MNCs influence and are influenced by political systems, international relations, economics, and societal dynamics. Prerequisites: IR 202 or Permission of Instructor.

IR 345 ***Conflict Resolution*** ***(3)*** ***[S]***

Examines theories, perspectives and practices in conflict resolution. Attention is paid to case studies of conflict resolution proposals. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 210

IR 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

IR 373 ***Communications Strategies in International Relations*** ***(3)*** ***[H], [S]***

The course explores how States, and now increasingly also regions, and cities, use public relations tools to advance their soft power, promote business, and project a particular public image. Using case studies from around the world, the course explores not only the tools used, but also evaluate their overall effectives. Pre-requisite: IR 202 or COMM 101. [Cross-listed with COMM 373].

IR 385 ***Kuwait Foreign Policy*** ***(3)***

Addresses aspects of the history and foundations of Kuwait's foreign policy. Discusses security threats and diplomatic tools using the 1990 Gulf War as the link between the past and today. Students will engage with critical domestic and international

documents (the domestic constitution, international organization resolutions, charters, border treaties) and discuss their implications on foreign policy with respect to global partnerships and current potential threats to state and regional stability. Prerequisite: IR 202 or Permission of Instructor.

IR 386 ***Perspectives on US Foreign Policy in the Middle East (Connect Program)*** ***(3)***

Explores the major debates, both theoretical and applied, that frame contemporary discussion about American foreign policy in the Middle East. Attention is paid to the perspectives of different focal actors and institutions including: the presidency, government agencies, legislators, interest groups, the mass public and the media. Examines the interplay between policy development and institutions, and reviews normative and empirical models of American Foreign Policy. Pre-requisite: IR 202 or Permission of Instructor.

IR 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

A research and writing project to be determined in consultation with the instructor. Can be repeated for credit with a different topic. Permission of Instructor.

IR 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of Instructor.

IR 470 ***Internship in International Relations*** ***(1 - 3)*** ***[Z]***

An internship experience to apply the knowledge acquired in the International Relations Program. A maximum of three (3) internship credit hours can be applied to the IR degree program. Prerequisite: IR 202 and Permission of instructor.

IR 480 ***Capstone*** ***(3)***

A research project that demonstrates the accumulated training in International Relations, subject to the instructor's approval. Requires students to write a 15 page research thesis. Prerequisites: IR 202 and IR 210 or Permission of Instructor.

Italian (ITAL)

ITAL 101 ***Introduction to Italian I*** ***(3)*** ***[H]***

The goals of this course are communicative. They are aimed at developing the four skills with an initial emphasis in listening and speaking. The course provides various opportunities for students to communicate in Italian in reality based situations.

ITAL 102 ***Introduction to Italian II*** ***(3)*** ***[H]***

This courses reviews material covered in ITAL 101. Students will gain proficiency in all four language skills (listening, speaking, reading and writing) and develop an understanding of the Italian people and culture. Permission of instructor. Prerequisite: ITAL 101.

ITAL 201 ***Intermediate Italian*** ***(3)*** ***[H]***

This course offers a complete review of the basic principles of grammar in addition to extensive oral practice. Emphasis is placed on developing good conversational ability. More focus will be placed on vocabulary building, reading and writing short texts in given situations. Permission of instructor. Prerequisite: ITAL 102.

Mathematics (MATH)

MATH 095 ***Preparatory Mathematics*** ***(3)***

Topics include linear equations and inequalities in one and two variables, absolute value, graphs, exponents and polynomials, simple factorization, rational expressions, and systems of linear equations. Prerequisite: Placement Test

MATH 100 ***College Algebra*** ***(3) [M], [Q]***

Topics include dividing factorizing polynomials, solving quadratic equations and inequalities, rational exponents, complex numbers, and investigating functions and their properties. Prerequisite: MATH 095 or by placement test.

MATH 101 ***Finite Mathematics*** ***(3) [M]***

Review of algebra, linear and quadratic equations, functions, graphs, systems of linear equations and inequalities, matrices, linear programming, sets, probability, combinatories, and elementary data analysis. Prerequisite: MATH 100 or by Placement Test

MATH 102 ***Introduction To Modern Mathematics*** ***(3) [M], [Q]***

A brief survey of several branches of mathematics that have arisen during the past 150 years. Topics are examined so their influence on modern life can be appreciated. They include the mathematics of voting, sharing and apportionment, graph theory, networks and fractal geometry. Prerequisite: Placement test.

MATH 103 ***Mathematics for Business*** ***(3) [M], [Q]***

Rate of change, first and second derivatives and their applications in economics and finance, Taylor approximation, matrix algebra and application, time value of money and interest rates - mathematical models, single and multiple cash flow applications, further applications to annuities and annuities due, applications to stocks and bonds. Prerequisite: MATH 100 or by placement test.

MATH 105 ***Nature of Mathematics*** ***(3) [M], [Q]***

This course is designed specifically to humanities students. It focuses mainly on the nature of mathematical practice, its foundations, development, and applications.
It covers topics such as: history of mathematics, types of mathematical reasoning (Inductive, Deductive), psychology of mathematics and the nature of invention/ discovery, logic and its relation to mathematics, philosophy of mathematics, sets and foundations, number theory, game theory, and applications of the above in real life. Prerequisite: MATH 095.

MATH 110 ***Pre-Calculus*** ***(3) [M], [Q]***

Topics include exponentials and logarithmic functions, trigonometric functions equations, inverse trigonometric functions and equations, trigonometric identities. Prerequisite: MATH 100 or by placement test.

MATH 201 ***Calculus I*** ***(3) [M], [Q]***

Review on functions, limits, continuity, derivatives, rules of differentiation, applications of differential calculus to real-world problems, anti-derivatives, basic integration rules. Pre-requisite: MATH 110 or by placement test.

MATH 203 ***Calculus II*** ***(3) [M], [Q]***

Riemann sum, fundamental theorem of calculus, fundamental integration techniques, numerical integration, applications of integrations, improper integrals, sequence and series, and the use of CAS. Prerequisite: Math 201.

MATH 205 ***Linear Algebra*** ***(3)*** ***[M]***

Topics include systems of linear equations, matrices, Gauss-Jordan elimination, determinants, vectors in two, three, and "n" dimensions, vector spaces, eigenvectors and eigenvalues, linear transformations, inner product spaces, complex vector spaces, and applications to various fields. Prerequisite: MATH 110.

MATH 206 ***Calculus III*** ***(3)*** ***[M]***

Parametric equations, polar coordinates, surfaces in space, functions of several variables, partial derivatives, the chain rules, gradients, directional derivatives, total derivatives, Lagrange multipliers, multiple integrals, Fubini's Theorem, cylindrical and spherical coordinates, vector fields, line integrals, curl, divergence, Green's and Stoke's theorem. Use of CAS. Prerequisite: MATH 203.

MATH 207 ***Advanced Engineering Mathematics*** ***(3 - 4)***

Functions of Several Variables. Vectors & Geometry of space. Linear Sys. & Matrices including Determinants, Linear Sys. of Equations, Eigenvalues & Eigenvectors. Vector Functions. Curvature, Motion in Space. Multiple Integrals. Intro. to Vector Integral Calculus: Fields, Line & Surface Integral, Green's, Stroke's, & Divergence Theorems. Complex Analysis: complex numbers and functions, differentiation and integration. Use of CAS. For Engineering majors only. Prerequisite: MATH 203.

MATH 210 ***Differential Equations*** ***(3)*** ***[M]***

Differential equations of first order, applications, singular solutions, linear equations with constant coefficients, miscellaneous methods for equations of higher order, solution in series, total differential equations, qualitative methods, and the use of the Laplace transform.
Prerequisite: MATH 203.

MATH 213 ***Discrete Mathematics*** ***(3) [M], [Q]***

Logic of compound and quantified statements, elementary number theory, modular arithmetic, methods of proof, sequences, mathematical induction, set theory, matrics, functions, relations, graphs, combinatories, and trees. Prerequisite: MATH 101 or MATH 110

MATH 325 ***Numerical Computing*** ***(3)***

Introduction to numerical algorithms, root finding, Approximation of functions, collocation, numerical integration and differentiation. Sophomore standing or Permission of instructor. Prerequisites: MATH 203 and CSIS 120.

MATH 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

MATH 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Management (MGMT)

MGMT 201 ***Principles of Management*** ***(3)***

This course takes a contemporary approach to understanding the essential principles of modern management, both from a theoretical and practical perspective. Course content is a synthesis of behavioral sciences concepts that provide the basic framework for the practice of management and the attainment of strategic goals and objectives. Students will gain an understanding of the functions and responsibilities of managers and will look at tools and techniques that can be utilized in the performance of the managerial job within the global business context. The course highlights the functions of management (planning, organizing, leading and controlling) in relation to the internal and external environmental and issues of ethics and

social responsibility. Prerequisite: ENGL 102.

MGMT 300 ***Quality Management*** ***(3)***

This course explores quality management theories and practices, focusing on continuous improvement and process management. Students will learn to apply tools and strategies such as QM, Six Sigma, Process Capability, and Statistical Process Control to enhance quality and foster a culture of excellence within organizations. Emphasis is placed on developing skills to lead and evaluate quality initiatives effectively.

MGMT 301 ***Organizational Development and Change*** ***(3)***

This course aims at offering students the knowledge and skills they will need to face the challenges of organizational change. It investigates the change capabilities of organizations, the reasons people may resist change, and introduces models of the change process and how it could be managed effectively. The course focuses on specific concepts, theories and tools of change management and identifies common mistakes, and reasons why change initiatives fail, as well as the factors underlying the successful management of change projects. Prerequisite: MGMT 201.

MGMT 303 ***Management and Leadership Development*** ***(3)***

Develops the management leadership and organization perspectives essential to the success of small to large businesses and individual managers. Development of management and organization leadership, creativity and innovation are stressed. Enhancing the manager's communication and negotiation skills is a critical dimension to developing effective managers. Developing an understanding of management philosophy and values and their practical impacts on managing a business is stressed. Prerequisite: MGMT 201

MGMT 304 ***Business Relationship Management*** ***(3)***

Develops communication skills for managing business relationships. Topics include relationships with external stakeholders and inter-organizational communication. Emphasis is on managing tensions among organizational stakeholders in relation to primary business goals. Prerequisite: MGMT 201.

MGMT 315 ***Decision Making in Management*** ***(3)***

Students will explore the use of data analytics and software tools to solve real-world business challenges in areas such as Finance, Marketing, Supply Chain Management, Economics, and Accounting. Key topics include modeling and managing uncertainty, efficient use of data, simulating complex systems, understanding decision-making processes, and optimal resource allocation. Emphasis is placed on practical applications and developing skills to make informed, data-driven decisions.

MGMT 333 ***Organizational Behavior*** ***(3)***

The course considers individual and group performances and activities within an organization. It places human behavior within the context of a work environment and determines its impact on job structure, performance, communication, motivation, decision-making and leadership. By gaining a better understanding of why people behave as they do, students will enhance their people management skills ability to work effectively with others. This us necessary for the accomplishment of organizational goals. Prerequisite: MGMT 201.

MGMT 343 ***Quantitative Research Methods for Business*** ***(3)***

Introduction to the scientific method, research design, data gathering, statistical analysis of data; computer applications for business issues; student develops the skills for becoming an active and informed consumer of research methodology and findings. Prerequisites: MATH 103 or MATH 110, and STAT 201.

MGMT 346 ***Production & Operations Management*** ***(3)***

This course develops analytical tools that contribute to efficient and effective production and operations. It covers deterministic and probabilistic models for managerial decision-making in manufacturing, logistics, and service operations. Prerequisite: BUS 209, MRKT 200 and MGMT 201.

MGMT 350 ***Essentials of Business Communication*** ***(3)***

Effective communication is a cornerstone of personal and professional success, particularly in management and organizational settings. Students will explore the communication process, develop proficiency in written, oral, and digital communication, and examine communication dynamics within teams and across diverse cultural contexts. The course emphasizes building effective communication strategies to navigate interactions with diverse organizational stakeholders, strengthening relationships and driving personal and organizational success.
Prerequisite: MGMT 201

MGMT 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

MGMT 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

MGMT 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

MGMT 413 ***Capstone: Strategic Management*** ***(3)***

The course emphasizes the integrative strategic decision making process and the development and implementation of productive, competitive, and sustainable business strategies. Senior Standing.

MGMT 470 ***Internship in Management*** ***(1 - 3)***

An internship experience with the requirement that students keep a journal and write a report summarizing what the internship job added to their knowledge of Management and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

MGMT 485 ***Senior Seminar in Management*** ***(3)***

This is a seminar for seniors where students conduct research projects on varying relevant and cutting edge managerial issues; presentation of research approaches, subject and results; a group project and an individual research project may be allowed. Instructor may vary and topics in theory and practice. Senior standing. Prerequisite: MGMT 201.

Marketing (MRKT)

MRKT 200 ***Principles of Marketing*** ***(3)***

An introduction to the marketing process from a managerial perspective. Topics include: the marketing environment, customer decision-making, marketing research and information systems, segmentation and targeting, and product, price, distribution, and promotion decisions. Prerequisite: ENGL 102.

MRKT 309 ***Digital Marketing*** ***(3)***

Examines the digital marketing mix, focusing on understanding online customers and effective strategies in content marketing. Students will learn to navigate key digital platforms, email marketing and search engine optimization to enhance brand visibility and engagement. Prerequisite: MRKT 200 and CSIS 110

MRKT 329 ***International Marketing*** ***(3)***

Examines theories, practices, and contemporary issues related to global marketing management and the international marketing environment. The course discusses strategic decisions related to international product and policies and examines ethical issues, global marketing organizations, and multi-national economic integration. Applications of global marketing strategies will be discussed through case analysis. Prerequisite: MRKT 200.

MRKT 330 ***Services Marketing*** ***(3)***

Examines theory and practice in marketing of services, which requires substantial adaptation beyond standard product marketing issues. In addition to learning how to adapt standard marketing practices to a service context, students will develop expertise in building service business models, managing service interactions with customers, and planning profitable service strategies. The course focuses on application through case studies, projects, and development of business plans. Prerequisite: MRKT 200, ECON 200.

MRKT 340 ***Social Media Marketing*** ***(3)***

Examines ways in which interactive technologies are changing the rules and processes for customer's engagement. Students will critically assess when various common social media can or cannot be effective marketing communications channels. Particular emphasis is on those SM which offer the ability for strong customer interaction and participation. The course is application orientated, including case studies, projects, and class participation in discussion so that students develop expertise about implementation issues. Prerequisite: MRKT 200 and CSIS 110.

MRKT 349 ***Buyer Behavior*** ***(3)***

The course explores the patterns and factors influencing consumers and considers the impact of consumer behavior on the marketer's ability to learn more about buying behavior. The course draws on concepts and findings from the behavioral sciences. An integrated model of consumer behavior will be analyzed and the elements that influence the decision-making process will be developed. Prerequisite: MRKT 200.

MRKT 355 ***Promotion and Advertising*** ***(3)***

Development of a promotional and advertising campaign for clients; formulation of advertising strategy, targeted audiences and consumer; multimedia campaign planning, campaign execution, and campaign evaluation. Prerequisite: MRKT 200.

MRKT 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: MRKT 200.

MRKT 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: MRKT 200.

MRKT 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor. Prerequisite: MRKT 200.

MRKT 401 ***Marketing Research*** ***(3)***

Applies qualitative and survey methods used in getting data to solve marketing problems. Topics include problem/opportunity formulation, determination of objectives, creation of research design, selection of data collection method, data analysis, interpretation of results, report production, and follow-up activities. There is a focus on strategic implications of marketing research and real-life applications through case analysis and projects. Senior standing. Prerequisites: MRKT 349.

MRKT 413 ***Marketing Capstone: Marketing Strategy*** ***(3)***

Application of marketing knowledge to marketing situations. Case studies, projects, marketing plan write-ups, simulations are used. Senior Standing.

MRKT 415 ***Supply Chain Management*** ***(3)***

Analyzes the various factors involved in designing and managing the supply chain and channels of distribution. The role of various channel members and their behavior, conflicts, cooperation, and motivation will be examined along with marketing logistics such as the impact of distribution policies on costs and customer service. Senior standing. Prerequisites: MGMT 346.

MRKT 470 ***Internship in Marketing*** ***(1 - 3)***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of Marketing and related fields. Students are limited to a maximum of 3 internship credit hours for any major and 6 credits overall. Permission of instructor and senior standing.

Music (MUSC)

MUSC 101 ***Music Appreciation*** ***(3) [G], [H]***

Chronological study of music styles of the western world, including an introduction to music elements and a review of the lives and works of famous composers.

MUSC 105 ***Introduction to World Music*** ***(3) [G], [H]***

An introduction to various music cultures through musical, social, and aesthetic approaches. The cultures featured can vary from semester to semester.

MUSC 110 ***Applied Lessons*** ***(1 - 3) [H], [O]***

Private intensive instrument or voice instruction. May be repeated for 8 total earned credits. Permission of instructor.

MUSC 160 ***Ensemble*** ***(3) [H], [O]***

Students sing and/or perform musical instruments in a group setting. Can be repeated for credit.

MUSC 165 ***Percussion Ensemble*** ***(3) [H], [O]***

An introductory performing percussion ensemble class (xylophones, other idiophones, drums). Students work on technical and reading skills while rehearsing beginning level repertoire and acquiring crucial experience in the rehearsal/performance processes. The course will culminate with an end-of-semester performance.

MUSC 215 ***Guitar Class*** ***(3) [H], [O]***

Development of basic guitar skills, including sight-reading and accompanying. It is recommended that MUSC 220 be taken before or concurrently with MUSC 215.

MUSC 216 ***Piano Class*** ***(3) [H], [O]***

A complete orientation to the keyboard for beginning pianists. Students are introduced to proper performance technique, etudes and scales, grand staff reading, sight reading, harmonization, solos and duets, and key signatures. It is recommended that MUSC 220 be taken before or concurrently with MUSC 216.

MUSC 217 ***Voice Class*** ***(3) [H], [O]***

An introduction to the basic principles of singing with particular attention to issues of breathing, tone, diction, and vocal range.

MUSC 220 ***Introduction to Songwriting*** ***(3) [H], [O]***

This course provides foundation in music theory to foster the skills needed for songwriting. Students will create melodies and lyrics while integrating essential music theory elements. Sophomore Standing.

MUSC 230 ***Music Theory II*** ***(3) [H], [O]***

This course is a continuation of MUSC 220 (Music Theory I). Students gain further understanding of how music is constructed through intermediate analysis of chords, melody, rhythm, musical form, and an examination of analytical techniques. Music Theory II is designed to help students acquire the knowledge and discipline necessary for success as a musician. Prerequisite: MUSC 220 with a grade of C or higher or permission of instructor.

MUSC 260 ***Choir Class*** ***(3) [H], [O]***

Performance- oriented vocal music ensemble open to all students. Students learn the rudiments of proper ensemble singing and prepare pieces for performance. Extra rehearsals may be required. Course may be repeated for credit.

MUSC 310 ***Applied Lessons II*** ***(1 - 3) [H], [O]***

Advanced private intensive instrument or voice instruction for students with established performance ability. May be repeated for 8 total earned credits. Permission of instructor.

MUSC 316 ***Advanced Piano Class*** ***(3) [H]***

This course is designated to enhance students' piano skills through the exploration of more advanced piano solos, duets, scales and notes reading. Prerequisite: MUSC 216 or MUSC 110 (piano).

MUSC 365 ***Percussion Ensemble II*** ***(3) [H], [O]***

Advanced performing percussion ensemble class (xylophones, other idiophones, drums.) Course is geared toward students who have taken MUSC 165, piano lessons, or can read music.

MUSC 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are usually taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

MUSC 370 ***Music of the Arabian Peninsula*** ***(3) [H], [K]***

Examination of music and poetic genres of Kuwait and regions of the Arabian Peninsula including structural analysis and study of the context in which creative forms exist. This course satisfies the General Education Requirement for Arab Culture. [Cross-listed with SBSA 370]

MUSC 388 ***Independent Study*** ***(1 - 3) [H], [Z]***

Can be repeated for credit with a different topic. Permission of instructor.

MUSC 389 ***Special Topics*** ***(3) [H]***

Can be repeated for credit with a different topic. Permission of instructor.

MUSC 399 ***Music and Culture Study Abroad*** ***(1 - 3) [B], [H]***

Introduces students to the dynamics of traditional cultures through ethnomusicological research and fieldwork involving live music, dance, rituals, and dramatic performances. Cultures can vary each semester, and course can be repeated for credit with a different topic. Permission of instructor.

Natural Sciences (NSCI)

NSCI 100 ***Natural Sciences Lecture*** ***(3) [P]***

This course provides lectures relating to concepts presented in first year courses in Natural Sciences. It is intended for students needing to fulfill the general education requirements in General Sciences. Permission of instructor.

NSCI 100L ***Natural Sciences Lab*** ***(1) [P]***

This laboratory course provides experiments and exercises relating to concepts presented in first year courses in Natural Sciences. It is intended for students needing to fulfill the general education requirements in General Sciences. Permission of instructor.

Philosophy (PHIL)

PHIL 100 ***Critical Reasoning*** ***(3) [H], [X]***

The course introduces a student to basic logical concepts and skills, such as arguments, induction, deduction, testing for validity and soundness. Special emphasis is placed on applying critical reasoning skills in everyday life, including the skill of identifying the logical fallacies and irrational appeals that attempt to manipulate our beliefs and actions.

PHIL 101 ***Introduction to Philosophy*** ***(3) [H], [X]***

An introduction to basic doctrines and concepts in philosophy through an analytical reading of selections from the writings of Western philosophers who have had a major impact on the development of philosophical discourse. The course also addresses the relationship of philosophy to the development of other disciplines, such as theology, history, politics, social science, science, and literature. Some of the perennial issues in philosophy are identified and discussed.

PHIL 103 ***Introduction to Moral Philosophy*** ***(3) [H], [X]***

The course examines major historical theories of ethics starting from Socrates and ending with contemporary philosophers, such as virtue theory, consequentialism and deontology. An attempt will be made to understand the historical development of ethics as a continuous process, with each succeeding stage building on the insights of the previous philosophers.

PHIL 201 ***Medieval Arabic Philosophy*** ***(3) [H]***

Survey of the works of major philosophers in Islam, such as Al-Ghazali, Ibn Rushd, the Sufis, and others. Course will include analysis of their religious and philosophical doctrines.

PHIL 203 ***Professional Ethics*** ***(3) [H]***

This course examines ethical debates facing individuals in the professional work-place. This course will examine the ethical nature of various professional relationships, including between employer and employee, client and business, colleagues and issues of

transparency. Questions surrounding the duties of report writing, ethical obligations regarding report writing, environmental duties, etc. are also discussed. The objective of the course is to provide students with a critical understanding of the ethical issues in their professional lives.

PHIL 280 ***International Ethics*** ***(3)*** ***[H]***

This course raises ethical questions in a global or international context. Questions of cross-cultural, conflicting values are of particular concern in this course. Specific topics may include: the theoretical bases for human rights, ethical questions of social or political identity, individual versus the state, immigration and refugee issues as well as ethical issues surrounding the environment and globalization. The objective of this course is to improve student's critical awareness and reasoning about ethical issues in a global context.

PHIL 310 ***Environmental Ethics*** ***(3)*** ***[H]***

This course examines normative issues in the study of the environment. Students will learn basic ethical concepts and theories and how to apply them to specific environmental concerns. Students will be asked to develop arguments to defend their own respective views regarding the environment and to develop viewpoints reflecting thoughtful and scholarly consideration of human duties, both individual and social, to the environment. Sophomore standing or permission of instructor. Prerequisite: ENGL 101. [Cross-listed with ENVS 310]

PHIL 311 ***Modern Western Philosophy*** ***(3)*** ***[H]***

Review of modern Western Philosophy of the Seventeenth, Eighteenth and Nineteenth Centuries. It explores issues of science, politics and culture and the impact of the Industrial Revolution. The course covers philosophy of science, pragmatism, utilitarianism, Darwinism and Marxism. Sophomore standing or permission of instructor. Prerequisite: PHIL 101.

PHIL 322 ***Western Political Philosophy*** ***(3)*** ***[H]***

Students will examine historical and contemporary political and social theories. This examination has the objective of increasing students' critical understanding of the theoretical bases for much of today's socio-political structures and beliefs. Historical and contemporary theories include the works of Plato, Aristotle, Hobbes, Locke, Machiavelli, Confucius, Gandhi, Marx, Mill, Rawls and Nozick. Sophomore standing or permission of instructor. Prerequisites: PHIL 101 or any IR/PLSC and ENGL 101. [Cross-listed with PLSC 322]

PHIL 350 ***Metaphysics*** ***(3)*** ***[H]***

Metaphysics is the study of "what is." This course introduces students to major metaphysical theories from the pre-Socratics to contemporary theories. Students will analyze the major metaphysical theories as well as develop their own justifications for their metaphysical beliefs. Topics covered may include: the existence of qualia, mid/body distinction, proofs for the existence of God and the nature of substances. Historical figures covered may include Plato, Aristotle, Aquinas, Descartes, Hume, Kant, Sartre, Quine and Kripke. Sophomore standing or permission of instructor. Prerequisites: Any PHIL course and ENGL 102.

PHIL 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

PHIL 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic.

PHIL 403 ***Advanced Business Ethics*** ***(3)***

This course examines ethical debates facing individuals working in professional fields. Topics covered may include: ethical treatment of employees by employers, ethical treatment of employer by philanthropic duties in the workplace and ethical duties

of businesses to clients and vice versa. This course will also address issues surrounding corporate environmental and social obligations.

Physics (PHYS)

PHYS 101 ***Introduction to Physics I*** ***(3)*** ***[P]***

This course is an introductory physics course for non-science majors. The course focuses on basic physics concepts and connections to everyday life in fields of mechanics and thermodynamics. Course topics include motion in one dimension, projectile motion, Newton's Laws of force, work, energy, circular motion, momentum, and heat and thermodynamics. Con-current: PHYS 101L

PHYS 101L ***Introduction to Physics I Laboratory*** ***(1)*** ***[P]***

A laboratory component for the Introduction to Physics I course. Con-current: PHYS 101

PHYS 102 ***Introduction to Physics II*** ***(3)*** ***[P]***

This course is an introductory physics course for non-science majors. The course focuses on basic physics concepts and connections to everyday life in fields of electricity, magnetism, and optics. Course topics include electrostatic force and field, electromagnetism, DC and AC circuits, light and optical devices, and mirror and lenses. Con-current: PHYS 102L

PHYS 102L ***Introduction to Physics II Laboratory*** ***(1)*** ***[P]***

A laboratory component for the Introduction to Physics II course. Con-current: PHYS 102

PHYS 105 ***Environmental Physics*** ***(3)*** ***[P]***

A one-semester course designed to explore the basic physical principles of light, heat and energy in the natural environment. Several key aspects of physics in the environment will be covered including energy (forms, conservation, sources and use), energy from fossil fuel, heat and the laws of thermodynamics, pollution of the atmosphere, environmental safety of nuclear energy and alternative sources of energy.

PHYS 107 ***Life in the Universe*** ***(3)*** ***[P]***

This course is an inter-disciplinary science course which explores our role in the universe, starting here on Earth where the very definition of "life" derives, to wondrous worlds in our solar system and finally to the great divide of interstellar space. The quest for life is the search for who we are and why we are here. The course topics will cover different areas of physics, chemistry, biology and geology.

PHYS 110 ***Introduction to Astronomy*** ***(3)*** ***[P]***

This course is a one semester introduction to astronomy. The course describes various important phenomena in astronomy, the physical principles underlying these phenomena, and methods of observing and interpreting them. Course topics include the principles of motion, universal gravitation, orbital motion, the nature of light and the operation of telescopes. Topics in astronomy include stellar astronomy, celestial coordinates, the solar system, the sun, the eight planets, and our galaxy.

PHYS 115 ***General Physics I*** ***(3)*** ***[P]***

An introductory calculus based course covering motion in one dimension, projectile motion, Newton's laws of force, concepts of work, energy and momentum, circular motion and rotational dynamics with laws of conservation of energy and angular momentum. A required laboratory that offers experiments in mechanics, momentum, work, and energy is part of this course. Prerequisite: MATH 201. Con-current: PHYS 115L.

PHYS 115L ***General Physics I Laboratory*** ***(1)*** ***[P]***

A laboratory component for the General physics I course. Con-current: PHYS 115

PHYS 116 ***General Physics II*** ***(3)*** ***[P]***

The second semester of calculus-based physics covers electromagnetic wave theory, AC and RC circuits, magnetic theory and applications to magnetic storage devices, electromagnetic induction and optical phenomena with applications to optical devices. Prerequisite: PHYS 115 & PHYS 115L. Con-current: PHYS 116L and MATH 203.

PHYS 116L ***General Physics II Laboratory*** ***(1)*** ***[P]***

A laboratory component for the General physics II course. Con-current: PHYS 116.

PHYS 212 ***Classical Mechanics*** ***(3)*** ***[P]***

A calculus-based general physics course. Includes kinematics, conservation of momentum, elastic and inelastic collisions, the scalar product, Newton's Law of Gravitation, conservation forces and law, Kepler's Laws, circular motion, equilibrium and elasticity, laws, projectiles, angular momentum, rotational motion, simple harmonic motion, energy, temperature, heat and the first law of thermodynamics, sound and mechanical waves. Prerequisite: PHYS 115.

PHYS 216 ***Electricity and Magnetism*** ***(3)*** ***[P]***

An introduction to the basic principles of electricity and magnetism including the contributions of Gauss, Faraday, Ampere, Maxwell, and others; capacitance, dc circuits, magnetic fields; electromagnetic propagation, antenna design, microwaves, radio wave transmission and reception, etc. Prerequisite: PHYS 116.

PHYS 312 ***Modern Physics*** ***(3)*** ***[P]***

An introduction to the history and nature of quantum mechanics; special theory of relativity; basic introduction to nuclear and elementary particle physics; discussion of classical laws, their modification and replacement to account for the behavior of atoms, subatomic particles, and matter at the macroscopic level; lasers, flux quantization. Sophomore standing or permission of instructor. Prerequisite: PHYS 116.

PHYS 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

PHYS 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

Political Science (PLSC)

PLSC 101 ***Introduction to Political Science*** ***(3)*** ***[G], [S]***

Investigates the nature of government and politics. Explores the basic philosophies, principles, and concepts of governance, and the structures and processes of political systems. Attention is paid to forms of government, public administration, international organizations and the international system.

PLSC 203 ***Comparative Politics*** ***(3)*** ***[G], [S]***

Examines how varied Western and other politics address the enduring problems of order, political responsiveness, political change, and the legitimacy of government structures. Investigates, comparatively, the relationships between the individual, social groups, and the state. Attention is paid to individual freedom and collective responsibility in political systems.

PLSC 210 ***Methods of Research in Political Science*** ***(3)*** ***[S]***

Introduction to scientific method, data gathering, research design, statistical analysis, and computer applications for international relations and comparative studies research. The course develops analytical skills that students need as active consumers of research findings. Prerequisite: IR 101 and MATH 095 or higher. [Cross-listed with IR 210]

PLSC 302 ***Public Policy*** ***(3)*** ***[S]***

A survey of concepts and issues in public policy. This course acquaints the student with basic theoretical frameworks for the study and analysis of policy-making as both a problem-solving process and a political process. This course also examines closely the application of these concepts, frameworks, and criteria in selected policy areas. Prerequisite: IR 102 or Permission of Instructor.

PLSC 303 ***Politics of Postindustrial Societies*** ***(3)*** ***[S]***

Examines the impact of technology, science, the information revolution and national and international social movements in postindustrial societies. Attention is paid to public policy and policy-making; domestic and foreign policy; politics and economies of welfare states; political participation and oppositional movements. Pre-requisite: IR 102 or Permission of Instructor.

PLSC 304 ***Arab Politics*** ***(3)*** ***[S]***

Investigates contemporary Arab political culture, its historical, economic, geographic, ideological and social roots. Attention is paid to the dynamics of Arab nationalism and political Islam. Pre-requisite: IR 102 or Permission of Instructor.

PLSC 307 ***Politics Nationalism*** ***(3)***

Discuss the main concepts, theories, and models for the bases for and construction of identity. Traces the historical processes the led to the emergence of modern nations and various types of nationalism. Pre-requisite: IR 202 or Permission of Instructor.

PLSC 315 ***American Government*** ***(3)*** ***[S]***

Examines the structure and function of the American governmental system. Attention is paid to the constitutional bases of government; federal, state and local government systems; intra-governmental relations; the Presidency and the Executive Branch, the Supreme Court and Congress, as well as the role of business, industry, non-governmental agencies and interest groups. Pre-requisite: IR 102 or Permission of Instructor.

PLSC 317 ***Government and Politics of Kuwait*** ***(3)*** ***[S]***

Examines the contemporary political institutions and behavior of the Kuwait political system. Attention is paid to political participation and elections; the relationship among the executive, legislative and judicial branches; the major national institutions involved in domestic and foreign policy-making. Pre-requisite: HIST 201 and Sophomore Standing.

PLSC 321 ***Islamic Political Philosophy*** ***(3)*** ***[S]***

Surveys Islamic political thought from the time of the Prophet Mohammad until the present. Investigates the development and evolution of institutions in the Islamic state; and Ibn Khaldoun's view of history, society and state. Addresses theories of state, including contemporary Shi'i and Sunni thought. Pre-requisite: IR 202 or Permission of Instructor.

PLSC 322 ***Western Political Theory*** ***(3)*** ***[S]***

Surveys Western political thought from ancient times to the present. Analyzes major themes such as the relationship of the individual to the state, political authority, political legitimacy, cooperation and conflict, and political change through the works of Plato, Aristotle, Rousseau, Machiavelli, Hobbes, Lock, and contemporary political theorists such as Rawls. Pre-requisite: IR 202 and Permission of Instructor.

PLSC 327 ***Ethnic Politics and Conflict*** ***(3)*** ***[S]***

Examines the complex configuration of identity, identity politics, and ethnicity. Attention is paid to the role of race, religion, culture and nationalism in ethnic identity, population, migration, and ethnic politics and conflict. Explores the rise of ethnic conflict globally. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 210.

PLSC 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

PLSC 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

A research and writing project to be determined in consultation with the Instructor. Can be repeated for credit with a different topic. Permission of Instructor.

PLSC 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of Instructor.

PLSC 405 ***Comparative Political and Economic Systems*** ***(3)***

Studies economic and political systems, planning strategies, and their effects on economic growth, democracy, equity, and effectiveness. Attention is paid to the historical experience of political and economic institutional arrangements in former socialist states, European countries, and nation-states in the Middle East. Pre-requisite: IR 202 or Permission of Instructor. Co-requisite: IR 210.

Psychology (PSYC)

PSYC 101 ***Introduction to Psychology*** ***(3)*** ***[S], [X]***

An overview of the theories and principles of human behavior and mental processes. Topics covered include research methods, the biological bases of behavior, consciousness, sensation and perception, learning and memory, personality, social behavior, and psychological disorders.

PSYC 200 ***Research Design and Methods*** ***(4)*** ***[S]***

An introduction to research design and methods in psychology and statistical applications. The course provides an overview of experimental and quasi-experimental methods, principles of measurement, correlational and observational methods, surveys and content analyses, and the applications of descriptive and inferential statistics. Includes laboratory component. Prerequisites: PSYC 101 and STAT 201, or permission of instructor.

PSYC 202 ***Lifespan Development*** ***(3)*** ***[S], [X]***

This course is an introduction to human development from infancy through death, focusing on the interactions of personal and

environmental factors in the development of perception, language, cognition, and sociality. Topics include developmental theories, infant perception, attachment, the development of language and memory; identity transitions; and peer relations, schools, families and communities as the contexts of life-cycle changes.

PSYC 203 ***Social Psychology*** ***(3) [S], [X]***

This course introduces students to theory and research about the dynamics of individuals and social groups. It includes studies of how we perceive ourselves and others, how we form our beliefs, judgments, and attitudes, social influences such as cultural or gender expectations, persuasion and pressures to conform, as well as our social relations, whether prejudicial, aggressive, intimate or helpful.

PSYC 204 ***Abnormal Psychology*** ***(3) [S], [X]***

This course orients students to a range of behaviors classified as "abnormal", and to theories and research about the dynamics, diagnoses and treatments of neuroses, psychoses, character disorders, psychosomatic reactions, and other abnormal personality patterns.

PSYC 235 ***Child Development*** ***(3) [S], [X]***

This course introduces the principles and theories of child development, from infancy through adolescence. It is a study of the physiological, cognitive, emotional and social changes that children go through within the socio-cultural context of their environment.

PSYC 240 ***Cognitive Psychology*** ***(3) [S], [X]***

This course offers current perspectives on how people acquire, represent, transform, and use verbal and nonverbal information. Topics include perception, attention, memory, action, thinking, language, and representations of knowledge. Pre-requisite: PSYC 101.

PSYC 332 ***Personality Theories*** ***(3) [S], [X]***

This course provides an understanding of theories and research from each of the major approaches to the study of personality: psychoanalytic, learning, cognitive, dispositional, humanistic, and intervention strategies derived from these approaches. Offered Fall term only. Sophomore standing or permission of instructor. Prerequisite: PSYC 101.

PSYC 335 ***Psychology of Addictions*** ***(3) [S], [X]***

This course assesses theory and research about the social impact, causes, characteristics, and treatment of addictions, including alcohol and drug addictions and eating disorders. Offered Spring term only. Sophomore standing or permission of instructor. Prerequisite: PSYC 101.

PSYC 342 ***Sensation and Perception*** ***(3) [S], [X]***

An exploration of how human sensory systems detect energy, such as light, sound, chemical, and mechanical energy, and how the mind processes and transforms this information in order to understand the environment. Topics covered include vision, hearing, smell, taste, and touch. Pre-requisite: PSYC 101.

PSYC 365 ***Marriage and Family Therapy*** ***(3) [S], [X]***

This course introduces students to treatment within the major models of family and couple therapy in Kuwait. Basic assumptions, major issues, primary theorists and techniques of each model will be considered, including working with diverse families and couples. This course is seminar-based and its primary focus will be in-class discussions and the sharing of different opinions and ideas. Prerequisite: PSYC 101.

PSYC 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

PSYC 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

A research and/or writing project to be completed in consultation with the instructor. Can be repeated for credit with different topic. Permission of instructor required for enrollment. Prerequisite: PSYC 101

PSYC 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

PSYC 470 ***Internship in Psychology*** ***(1 - 3)*** ***[Z]***

An internship experience with the requirement that the student write a report summarizing what the internship job added to his to her knowledge of Psychology. Students are limited to a maximum of 6 internship credit hours. This is a pass/fail course. Junior standing and permission of instructor. Prerequisite: a minimum GPA of 2.0.

PSYC 475 ***Current Issues*** ***(3)***

Seminar on current research, theory and applications of psychological principles. Junior standing.

Religion (RELG)

RELG 101 ***Introduction to Islamic Studies*** ***(3)*** ***[H]***

Analysis of the structure and dynamics of the Islamic belief system, including law, traditions, culture, and society. Original readings illustrating the classical Islamic paradigm are assigned. Contemporary issues of reform, renewal, modernization and fundamentalism, as well as contemporary debates among Muslims are addressed.

RELG 315 ***Religions of the World*** ***(3)*** ***[H], [X]***

The course introduces the world's major religions both in their historical dimension and as they are practiced today. The origins and historical development, central doctrines, devotional practices, and cultural expressions of Hinduism, Jainism, Buddhism, Sikhism, Daoism, Confucianism, Shinto, Judaism, Christianity and Islam are considered in relation to common themes of human experience. Sophomore Standing.

RELG 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

RELG 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

RELG 389 ***Special Topics*** ***(3)***

Selected topics of interest in religion. Can be repeated for credit with a different topic. Permission of instructor.

Social and Behavioral Sciences (SBSA)

SBSA 101 ***Introduction to Social and Behavioral Sciences, Concentration in Anthropology*** ***(3) [G], [S]***

An introduction to the study of human society from a multicultural perspective. The course covers such topics as language, food, economics, political systems, religion, art, kinship and descent, gender, marriage and family, health, and cultural change. A prerequisite for many SBSA courses.

SBSA 200 ***Ethnographic and Research Methods*** ***(3) [S]***

An introduction to ethnographic fieldwork and research design. The course covers both issues that confront researchers in the field as well as the methodology used to collect data. Among the methods to be presented are interviews with individuals, focus groups, surveys and questionnaires, data analysis and presentation. Students will have the opportunity to learn by doing. COMM 211 recommended for COMM majors. Prerequisite: SBSA 101.

SBSA 205 ***Fundamentals of Arab Society*** ***(3) [K], [S]***

An overview of the structure of Arab society and its diversity. The course covers the relationship between environment and culture, the impact of history and religion on regional values, and the three basic subsistence strategies: Bedouin nomad, agricultural villager, and urban dweller. It also provides examples of social and cultural change.

SBSA 210 ***Arab Society and Culture*** ***(3) [K], [S]***

This course explores the complexity and diversity of Arab society in its socio-cultural aspects. Among the topics to be covered are family life, gender roles, political culture and the military, economics, education, media, the arts, and the Arab communities in Europe and America.

SBSA 222 ***Global Media and Spaces of Identity*** ***(3) [S]***

Anthropology of media is an essential area of study, living as we do, in a media saturated world today. The course examines new paradigms in the anthropology of visual communication in looking at how media interacts with issues such as representation, people's sense of self-identity and collective cultural identities, nationalism and transnationalism, media activism, diasporas, and social engagements with technology. The course locates the anthropological voice in media by locating it in worlds of practice and debate. [Cross-listed with COMM 222]

SBSA 224 ***Shopping and Consumerism*** ***(3) [S]***

This course focuses on how consumers negotiate desire, difference, and power in the most seemingly commonplace material consumption and tries to decode the culture of consumption and what shopping says about people. The course traces the historical development of the relationship between goods and identity from the eighteenth century and identifies the systems of inequality that have been reproduced (as well as subverted) through material consumption. Students learn how social reality is constituted in an environment steeped in global consumer imagery, and are armed with analytical techniques to probe the social and ideological meanings invested in goods, thereby also gaining a critical, self-reflective perspective on cultural differences.

SBSA 235 ***Identity, Difference and Deviance*** ***(3) [G], [S]***

A critical, historical assessment of concepts of abnormality and deviancy as they emerge across time and cultures. The course covers longstanding debates about the relations of human nature and culture from 19th-century measurements of "primitives" and "freaks" to contemporary studies of mental illnesses, witchcraft, affliction and spirit possession, drug and alcohol abuse, moral panics, social control, outlawed deviancy, and acceptable forms of deviancy.

SBSA 239 ***Nations and Migration*** ***(3) [S]***

Mobility, a key feature of contemporary life, has led to fundamental changes in our understanding of identity, culture, and community. Drawing on an inter-disciplinary range of debates, the course examines how, while nationalism and migration might be seen as opposing processes, migration often leads to reinvigoration and rephrasing of national identity, frequently with important political consequences. The course also discusses the range of phenomena that make up the "endless motion" of

migration that shapes our everyday experiences.

SBSA 249 ***Images of Women in Media*** ***(3)*** ***[S]***

In examining links between gender, media, and modernity, this course offers examples of media representations of women's identity. Students will not simply analyze media representations of women, but learn to contextualize and critically examine them within a broader framework of the characteristics of contemporary culture in specific regions. This course will "cross borders" of disciplines, methods, and approaches, and intervene in current debates in the fields of cultural anthropology, media and cultural studies, global/local, Eurocentrism and multiculturalism. [Cross-listed with COMM 249]

SBSA 255 ***Health, Medicine and Curing*** ***(3)*** ***[O], [S]***

Analyzes the socio-cultural factors and the global forces that compose health, medicine, and curing. Critically explores health care consequences of inequality and the connection between power and medical knowledge particularly in Western bio-medicine. The topic covers how different people socially construct and manage well-being and illness, and examines the role of healers (e.g. physicians, shamans, and mid-wives) in cultural context.

SBSA 260 ***Ethnographic Film*** ***(3)*** ***[O], [S]***

A survey of historical and contemporary trends in ethnographic films and film-making. This course explores the use of film in anthropological analysis, documentation, and representation, and the technical limitations and ethical issues encountered by ethnographic filmmakers. We will screen and discuss films that portray the lives of diverse people and communities.

SBSA 270 ***The Indigenous Americas*** ***(3)*** ***[G], [S]***

This module of the Indigenous Americas introduces students to the cultures of South America through historical and ethnographic study. It is designed to give students a general understanding of some of the core issues of a large and complex geo-political area. We will explore the shifting cultural, political and economic relations from the colonial period to contemporary times. The course will pay particular attention to the place of indigenous people in the national and international context.

SBSA 280 ***Kinship & Families-Global Era*** ***(3)*** ***[G], [S]***

Surveys the anthropological history of kinship and explores the way global processes have changed or challenged family bonds. The course analyzes the impact of technologies, migration, and the global economy on personal relationship.

SBSA 320 ***History of Anthropological Theory*** ***(3)*** ***[S]***

This course will explore some of the main theoretical traditions in the history of anthropology from the late 18th century to the present such as evolutionism, historical particularism, functionalism, structuralism, cultural materialism, neo-Marxism, interpretive and postmodernism and others. The course will attempt to understand these currents in social thought in relationship to each other and to the times which produced them.
Prerequisite: SBSA 101.

SBSA 341 ***Women in Cross-Cultural Perspective*** ***(3)*** ***[S]***

Explores the biological and cultural basis of gender, examines the factors that influence the relative status of men and women, and investigates the relationship between gender and such fields as politics, economics, health, violence, the family, and the media.

SBSA 344 ***Tourism and Cultural Change*** ***(3)*** ***[S]***

Analyzes tourism from a cultural perspective. Explores issues such as the impact of tourism on the environment and society, culture as a commodity, authenticity, touristic imagery, material aspects of tourism such as souvenirs, gender roles in tourism, and exploitation.

SBSA 345 ***Globalization: Opportunities and Challenges*** ***(3) [G], [S]***

The course provides an anthropological and ethnographic introduction to globalization and a world of flows and interconnections. We will focus on how through globalizing processes, peoples and cultures are becoming increasingly interconnected, and also on ways how people in different parts of the world mediate these processes in culturally specific ways.

SBSA 348 ***Anthropology of Human Rights*** ***(3) [G], [S]***

This course applies anthropological concepts and methods to understanding human rights issues in the contemporary world. The course compares Western to non-western views of human rights, and examines how competing views are grounded in the United Nations, governmental and non- governmental organizations.

SBSA 360 ***Genocide and Refugees*** ***(3) [G], [S]***

A critical, historical approach to understanding genocide with a human rights orientation to assess why such atrocities should be confronted. The course explores specific cases and diverse conditions leading to genocide, ethnocide and population displacements. Students will analyze the role of the modern state, colonialism, political ideologies, ethnicities and nationalism as major forces behind genocidal campaigns and assess the cultural factors leading to genocide.

SBSA 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

SBSA 370 ***Music of the Arabian Peninsula*** ***(3) [B], [K], [S]***

This course deals with music, dance, and poetic genres of Kuwait and regions of the Arabian Peninsula. It includes structural analysis and an examination of the context in which these creative forms exist. This course satisfies the General Education Requirement for Arab Culture. [Cross-listed with MUSC 370]

SBSA 372 ***Anthropology of Business*** ***(3) [S]***

This course focuses on the application of anthropology in business. Access to meaningful information is often the difference between success and failure. Anthropological methods, by focusing on a holistic approach, qualitative data, and ethnographic analyses provide information in ways that traditional business simply cannot. Anthropology plays a critical role in understanding and analyzing diverse business and organizational issues in different societies and cultures, where cultural awareness and sensitivity is critical for successful business ventures.

SBSA 388 ***Independent Study*** ***(1 - 3) [Z]***

Can be repeated for credit with a different topic. Permission of instructor.

SBSA 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

SBSA 470 ***Internship in Social and Behavioral Sciences, Concentration Anthropology*** ***(1 - 3) [Z]***

An internship experience to apply the knowledge acquired in the Social and Behavioral Sciences, concentration Anthropology Program. A maximum of three (3) internship credits hours can be applied to the SBSA degree program. Permission of instructor is required.

SBSA 485 ***Seminar in Social and Behavioral Sciences, Concentration in Anthropology*** ***(3)***

A senior seminar that examines selected critical issues in the field of Social and Behavioral Sciences, Concentration in

Anthropology. Senior standing or permission of instructor.

Internship Free Elective- CENG (SCEL)

SCEL 473 ***Internship for Free Elective Sciences & Engineering*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly journals, and final report explaining what the internship added to the student's knowledge in an approved discipline. A pass/no pass course requiring junior standing and permission of instructor. Prerequisite: a minimum GPA of 2.00.

Internship Free Elective- CSIS (SCSC)

SCSC 473 ***Intern for Free Elective- SCIS*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly log and final report explaining what the internship added to the student's knowledge in an approved discipline. A Pass/No Pass Course requiring Junior Standing and Permission of Instructor. Prerequisite: Minimum GPA of 2.00.

Social Sciences (SOCS)

SOCS 100 ***Introduction to Social Sciences*** ***(1 OR 3)*** ***[S], [X]***

This course is designed to provide the basic knowledge in the Social Sciences. The course provides information relating to concepts, studies and facts in the Social Sciences disciplines. Topics vary and may include psychology, criminology, geography, public health, linguistics, archaeology, environment, politics, international studies, history, economics,

SOCS 470 ***Internship in Social Sciences*** ***(3)*** ***[Z]***

The SOCS Internship is a senior-level General- Education course in social sciences. It offers students an opportunity to gain real-world experience in a social sciences-related setting. This is a graded course. Senior Standing.

Internship Free Elective - IR (SOEL)

SOEL 473 ***Internship for Free Elective Social Sciences*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through appreciation of knowledge outside the academy. Requirements include: weekly journals, and final report explaining what the internship added to the student's knowledge in an approved discipline. A pass/no pass course requiring junior standing and permission of instructor. Prerequisite: a minimum GPA of 2.00.

Internship Free Elective- SBSA (SOSA)

SOSA 473 ***Intern for Free Elective- SBSA*** ***(1 - 3)*** ***[Z]***

Supervised experience designed to enhance intellectual development through application of knowledge in an occupation. Requirements include: weekly log and final report explaining what the internship added to the student's knowledge in an approved discipline. A Pass/No Pass Course requiring Junior Standing and Permission of Instructor. Prerequisite: Minimum GPA of 2.00.

Spanish (SPAN)

SPAN 101 ***Introduction to Spanish I*** ***(3) [H], [X]***

The course is designed for beginners. The objective is to provide students with necessary skills in oral and written communication. The class is taught almost entirely in Spanish.

SPAN 102 ***Introduction to Spanish II*** ***(3) [H], [X]***

Introduction to Spanish II continues to reinforce communicating skills with an emphasis placed on speaking (acquisition of vocabulary for personal and practical use). It will develop the ability to communicate with accurate pronunciation and intonation. Students will be exposed to the Spanish and Latin American culture with the use of video and other authentic material. The course content is built with a variety of methods and formats to suit the needs of learners. The class is conducted almost entirely in Spanish. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Permission of instructor. Prerequisite: SPAN 101.

SPAN 201 ***Intermediate Spanish*** ***(3)*** ***[H]***

Intermediate Spanish continues to reinforce active communicating skills with more emphasis placed on reading and writing texts but it will continue to extend speaking skills in daily life situations. Students will be exposed to the Spanish and Latin American culture with the use of video and other authentic material. The course content is built with a variety of methods and formats to suit the needs of learners. At this level, the class is conducted entirely in Spanish. Students may not enroll and will not receive credit for a language-learning course taken below the level of the language-learning course into which they were tested. Permission of instructor. Prerequisite: SPAN 102.

SPAN 202 ***Intermediate Spanish II*** ***(3)*** ***[H]***

While still focusing on oral communication, more emphasis will be placed on reading short texts and writing short paragraphs. Students will develop a strong knowledge of Spanish grammar (verbs in present, past, future and subjunctive), and a strong vocabulary base. Permission of instructor. Prerequisite: SPAN 201.

SPAN 333 ***Language and Culture*** ***(3)***

This is an advanced language course that improves students' oral, reading, and writing skills through an examination of Spanish society. Themes covered include family, education, arts, gastronomy, politics and immigration. Class discussion will be based on literary readings, songs, and movies. Permission of instructor. Prerequisite: SPAN 202.

SPAN 369 ***Short Course*** ***(1 - 3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with a different topic. Permission of instructor.

SPAN 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

SPAN 389 ***Special Topics*** ***(3)***

Can be repeated for credit with a different topic. Permission of instructor.

SPAN 399 ***Spanish Study Abroad*** ***(3)*** ***[Z]***

This course is an option for students who wish to achieve fluency and an understanding of life in Spain. Students will study in Spanish speaking environment. Many courses assignments will take place out of a traditional classroom setting and students will be required to interact with native speakers every day. Permission of instructor. Prerequisite: SPAN 101.

Statistics (STAT)

STAT 201 ***Statistics*** ***(3) [M], [Q]***

Topics include data classification, means, measures of central tendency and dispersion, frequency distributions, probability, sampling distributions, point and interval estimates, hypothesis testing, simple regression and correlation. Computer-based statistical packages are utilized. Prerequisite: MATH 095 or by placement test.

STAT 202 ***Regression for Business*** ***(3)*** ***[M]***

This course extends Statistics 201 to include estimation, hypothesis tests concerning one and two populations, statistical inference, Chi-square tests, simple and multiple regressions and model building. Prerequisite: STAT 201.

STAT 203 ***Probability and Statistics*** ***(3 - 4)***

Topics include data classification, descriptive statistics, elementary probability theory, the central limit theorem, confidence intervals and hypothesis testing for one and two samples, linear regression, Chi square tests, and the use of Matlab. Pre-requisite: MATH 100.

STAT 214 ***Statistics for Engineers*** ***(3 - 4)*** ***[M]***

Students will be given an in-depth exposure to proofs of statistical formulas and theorems. Topics for study will include counting methods, probability, discrete and continuous random variables, probability distributions, density functions, expectation, moments and moment generating functions, sampling distributions and the Central Limit Theorem, point and interval estimations, hypothesis testing, unbiased estimators, consistency, sufficiency, robustness, regression and correlation. Co-requisite: MATH 203.

STAT 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

Systems Engineering (STEG)

STEG 210 ***Dynamic Systems*** ***(3)***

Modeling of dynamic systems. Formulation of mathematical models from system descriptions, including computer, electrical, biological, economic, transportation, and mechanical systems. Model behavior analysis using analytical and numerical methods. Discrete-time and continuous time systems. Linear and nonlinear systems. Introduction to computer modeling using MATLAB. Prerequisite: CSIS 120; Concurrent: PHYS 116 and STEG 210L.

STEG 210L ***Dynamic Systems Laboratory*** ***(1)***

A laboratory component for the course STEG 210 Dynamic Systems. The lab syllabus is aligned with the course topics. Concurrent: STEG 210.

STEG 220 ***Engineering Statistical Analysis*** ***(3)***

Analytical methods for solving systems engineering problems using concepts from probability and statistics. Advanced hypothesis testing. Analysis of variance, linear and multiple regression analysis, non-parametric methods. Use of Software tools. Prerequisite: STAT 203 or STAT 214.

STEG 220L ***Engineering Statistical Analysis Laboratory*** ***(1)***

A laboratory component for the course STEG 220 Engineering Statistical Analysis. The lab syllabus is aligned with the course topics. Concurrent: STEG 220

STEG 230 ***Introduction to Manufacturing Systems*** ***(3)***

Mechanical behavior and forming of metals including Yield criteria, representative stress, and representative strain, work due to plastic deformation, introduction to Bulk deformation processes: forging, extrusion, rolling, rod and wire drawing. Sheet forming processes: blanking, deep-drawing and bending, Fundamentals of material removal processes (subtractive manufacturing): cutting tools, cutting fluids, power consumption, different material removal processes, turning, drilling, shaping, milling, grinding, broaching, planning, reaming. Introduction to additive manufacturing (3D printing).
Prerequisite: PHYS 116.

STEG 230L ***Introduction to Manufacturing Systems Laboratory*** ***(1)***

A laboratory component for the course STEG 230 Introduction to Manufacturing Systems. The lab syllabus is aligend with the course topics. Concurrent: STEG 230.

STEG 321 ***Systems Simulation*** ***(3)***

Simulation model formulation, discrete events simulation. Simulation languages. Random number and random-variate generation. Data gathering, simulation input and output analysis, verification and validation. Applications of simulation. Introduction to stochastic simulation. Use of simulation Software. Pre-requisite STEG 220 and Concurrent: STEG 321L

STEG 321L ***Systems Simulation Laboratory*** ***(1)***

A laboratory component for the course STEG 321 Systems Simulation. The lab syllabus is aligned with the course topics. Concurrent: STEG 321.

STEG 330 ***Operations Research I*** ***(3)***

Covers deterministic models with emphasis linear programming. Covers graphical solutions, simplex method, duality, sensitivity analysis. Transportation, assignment, and network models. Integer programming. Introduction to nonlinear programming. Prerequisite: MATH 205 and CSIS 120.

STEG 331 ***Operations Research II*** ***(3)***

Mainly covers deterministic models in operations research. Deterministic dynamic programming, inventory models, and nonlinear programming. Applications to engineering and management problems. Introduction to stochastic operations research. Prerequisite: STEG 330 and STEG 220.

STEG 341 ***Production and Operations Management*** ***(3)***

Operations management analytics, planning, scheduling, maintenance, and reliability. Work measurement and inventory control. Prerequisite: STEG 220.

STEG 345 ***Quality Control*** ***(3)***

Covers quality and continuous improvement concepts. Design of quality control systems and quality control techniques. Statistical process control and control charts for variables and attributes. Acceptance sampling, reliability, process capability analysis, quality standards, total quality management (TQM), leadership and change. Use of quality control software. Prerequisite: STEG 220.

STEG 350 ***Human Factors Engineering*** ***(3)***

Incorporation of human factors into system design, analysis, and evaluation. Human capabilities. Facilitating human performance and activities. Communication with human users; design of displays and controls. Introduction to ergonomics, engineering anthropometry, and workplace design. Prerequisite: STAT 203.

STEG 369 ***Short Course*** ***(3)***

Topic varies by semester. Classes are taught by a guest lecturer or lecturers. Can be repeated for credit with different topic. Permission of Instructor.

STEG 388 ***Independent Study*** ***(1 - 4)*** ***[Z]***

Can be repeated for credit with different topic. Permission of Instructor.

STEG 389 ***Special Topics in Systems Engineering*** ***(3)***

Can be repeated for credit with different topic. Permission of Instructor.

STEG 420 ***Facilities Planning and Design*** ***(3)***

Facility planning and design. It covers layout, space optimization, and environmental considerations, blending theoretical knowledge with practical applications. Students will learn to design efficient, sustainable, and ergonomically sound facilities, using contemporary tools and techniques. Prerequisite: STEG 220.

STEG 422 ***Advanced Simulation*** ***(3)***

Stochastic simulation. Monte Carlo (MC) methods, Markov-chain, Simulated Annealing. These methods will be compared with classical numerical schemes. Queuing models. Alternate system designs. Applications of stochastic simulation. Use of simulation Software. Pre-requisite: STEG 321.

STEG 431 ***Stochastic Operations Research*** ***(3)***

Probabilistic methods for solving decision problems under uncertainty, decision analysis, queuing theory, inventory models, reliability, Markov chain models, and simulation. Applications to engineering and management problems. Emphasis on modeling and problem solving. Prerequisite: STEG 220 and STEG 330.

STEG 440 ***Risk Management in Systems Engineering*** ***(3)***

This course explores risk management principles in systems engineering. Students will engage with risk identification, analysis, mitigation strategies, and decision-making processes. The course integrates case studies and practical exercises to understand risk in complex systems, preparing students for challenges in engineering and technology fields. Prerequisite: ENGR 340.

STEG 442 ***Supply Chain Engineering*** ***(3)***

Covers concepts, tools, and techniques from supply-chain management. Engineering Planning and Design. Analysis, metrics, decision models, and forecasting. Modeling and Network design. Transportation. sustainable supply-chain. logistics management. Use of Software. Prerequisite: STEG 341.

STEG 446 ***Engineering Reliability*** ***(3)***

Reliability definition and parameters computing. Measuring and evaluating reliability: failure rate estimation, prediction, restorability, modeling, availability and dependability. Introduction to reliability assurance. Engineering case studies. Prerequisite: STEG 345.

STEG 451 ***Health and Safety Engineering*** ***(3)***

Covers safety and health for engineers. Local and international laws, regulations, and standards. Hazards assessment, prevention, and control. Risks to employees, facilities, production, and the environment. Health and safety management; ethics, incident data recordkeeping and reporting. Total safety management. Prerequisite: STEG 220.

STEG 452 ***Productivity Improvement*** ***(3)***

Work study and productivity. Graphical Analysis and work methods improvement. Data and time systems; work measurement sampling. Physiological work measurement. Improving productivity; ergonomics, incentives, and other methods. Prerequisite STEG 350 and ENGR 330.

STEG 465 ***Petroleum Engineering*** ***(3)***

Overview of petroleum engineering systems and industry processes. Identify petroleum products, handling, and marketing. Oil exploration, exploitation, drilling, production, reservoir and formation evaluation, transportation and refining. Government regulations. Prerequisite: ENGR 200 and STEG 230. Restriction: Senior Standing.

STEG 470 ***Internship in Systems Engineering*** ***(3)***

An Internship experience with the requirement that the student write a report summarizing what the internship job added to his or her knowledge of Systems Engineering and related fields. Students are limited to a maximum of 6 internship credit hours. This is a pass/fail course. Junior standing and Permission of Instructor. Prerequisite: A Minimum Grade Point Average of 2.0.

STEG 475 ***Senior Design Capstone I*** ***(3)*** ***[Z]***

A supervised project in groups of normally three students aimed at providing practical experience in some aspect of Systems Engineering. Students are expected to complete a literature survey, project specification, critical analysis, and to acquire the necessary material needed for their intended end product. Prerequisites: STEG 321 and Concurrent: STEG 431.

STEG 480 ***Senior Design Capstone II*** ***(3)***

A course that seeks to impart in students the skill to integrate the knowledge gained in different courses by asking them to develop a product that has passed through the design, analysis, testing, and evaluation stages. This course includes production of a professional report, design process and outcome, implementation and testing, and critical appraisal of the project. Prerequisite: STEG 475.

STEG 495 ***Professional Certification in Lean and Six Sigma.*** ***(3)***

A professional certification course in Lean and Sig Sigma. Prerequisites: STEG 230 and STEG 345.

Translation (TRAN)

TRAN 101 ***Introduction to Translation*** ***(3)*** ***[H]***

The course introduces students to the discipline of translation as a multilingual, interdisciplinary process involving various linguistic and cultural perspectives. Elementary skills are developed by reviewing dictionary types, thesauri, synonyms and antonyms, and by rendering English into Arabic and vice versa.

TRAN 201 ***Theoretical and Practical Issues in Translation*** ***(3)*** ***[H]***

Various theoretical and practical issues associated with translation. The course covers several translation methods including word-for-word, semantic, and communicative translation. The course also examines how to approach problematic issues such as lexical and cultural gaps as well as the translation of idioms, proverbs and folk sayings. Prerequisite: TRAN 101.

TRAN 380 ***Media Translation*** ***(3)***

The course teaches the various theories and practical skills and techniques of translating, subtitling and dubbing media materials, particularly television programs. The course involves education and training based on TV materials related to Media, Economics, Politics, Law, Business, Literature, Culture, Medicine and Science. Sophomore standing. [Cross-listed with COMM 380]

TRAN 388 ***Independent Study*** ***(1 - 3)*** ***[Z]***

Can be repeated for credit with a different topic. Permission of instructor.

TRAN 389 ***Special Topics*** ***(3)***

Can be repeated for credit with different topic. Permission of Instructor.

University (UNIV)

UNIV 100 ***Essentials of Learning*** ***(2)*** ***[L]***

The course facilitates student's integration into AUK's learning community by developing their understanding of the university's liberal arts culture. Skills for academic success are integrated into an interdisciplinary context which fosters students' meaningful educational engagement, and encourages them to incorporate self-reflective practices.

UNIV 110 ***University, Community and Citizenship*** ***(3)*** ***[L]***

The Common Reader course provides first-year students with a shared intellectual experience that will stimulate discussion and critical thinking while encouraging students to use higher-level reasoning skills in order to make decisions or draw conclusions. The course will incorporate the principles of public speaking in both large and small group environments and promote effective communication in a variety of contexts. A primary aim of this course is to investigate the common reader material from multitude perspectives informed by the liberal arts philosophy. This interdisciplinary course will synthesize general education concepts to create sense of community among students, faculty and staff. Concurrent: UNIV 100.