



Undergraduate Course Descriptions

Course Code Legend

Numbering

00-100	Developmental Courses
100-199	Freshmen Courses
200-299	Sophomore Courses
300-399	Junior Courses
400-499	Senior Courses

This Legend generally applies. Students should consult their advisors to discuss specific exceptions.

Code

ACCG	Accounting		
AIMC	Advertising and Integrated Marketing Communications		
ANTH	Anthropology		
ARCH	Architecture		
ARTS	Fine Arts	FREN	French
BDSC	Business Analytics	GDES	Game Design
BIOL	Biology	GDEV	Game Development
BQ-TECH	Big Question-Technology and Humanity	GEOG	Geography
BQ-IMAG	Big Question-Imagination, Expression and the Written Word	HIST	History
BQ-CULT	Big Question-Cultures, Traditions and Societies	IDEL	Interior Design Professional Elective (Transfer-in)
BQ-ETHI	Big Question-Ethics, Thought and Consciousness	IDES	Interior Design
BQ-SCIE	Big Question-Science and the Nature of Reality	IELP	Intensive English Language Program
BUAI	Artificial Intelligence in Business	INST	International Studies
BUEL	Business Professional Elective (Transfer-in)	JOUR	Journalism
BUSI	Business	MATH	Mathematics
CABR	Course Abroad	MEST	Middle Eastern Studies
CHEM	Chemistry	MGMT	Management
COMM	Communication	MKTG	Marketing
COMP	Computer Information Systems	PHIL	Philosophy
DDFT	Digital Design and Fabrication Technology	PHYS	Physics
DESI	Design	POLS	Political Science
DPST	Digital Production and Storytelling	PSYC	Psychology
ECON	Economics	QUAN	Quantitative Methods
ECVL	Civil Engineering		
EECE	Computer/Electrical Engineering	SOCI	Sociology
EMEC	Mechanical Engineering	SPAN	Spanish
ENGB	English Bridge		
ENGG	Engineering	UNIV	The University Experience
ENGL	English	VCAD	Advertising
FINA	Finance	VCCC	Visual Communication
		VCDM	Digital Media
		VCGD	Graphic Design
		VCPH	Photography
		VCST	Studio Art
		WLDC	World Cultures

Hours

Where relevant, the Courses carry the following hours' legend:
(lecture – lab, studio, field work – credits)

Frequency

The frequency of the course offering is indicated per the following legend:

F = Fall **S** = Spring
SI = Summer I **SII** = Summer II

Prerequisites

If a course does not list a prerequisite, that means that students are allowed to register without previous specific coursework. However, students should be mindful of the considerations made under *English as a Prerequisite* on p. 74 and any other course sequencing advice provided by an Academic Advisor.

ACCG 201 | PRINCIPLES OF FINANCIAL ACCOUNTING (3-0-3)

Prerequisites: BUSI 101, MATH 200 | F, S, SI, SII

This introductory course focuses on external financial reporting, providing a general overview of basic financial statements and the accounting process that produces them. This course covers topics such as the nature and purpose of accounting and accounting information, fundamental accounting concepts, principles and methods, the accounting cycle, accounting for current and fixed assets, introduction to liability and owners' equity, with emphasis on sole proprietorship and partnership accounts, and introduction to financial statement analysis. Students must receive at least a C grade in this course in order to register for additional Accounting Major courses.

ACCG 211 | PRINCIPLES OF MANAGERIAL ACCOUNTING (3-0-3)

Prerequisite: ACCG 201 | F, S, SI, SII

The emphasis of this course is on the use of accounting information internally by managers in an organization. Students will gain an understanding of the information needed by managers in planning, control and decision making. This course covers cost concepts and cost behavior, activity based costing, costing systems, operational budgets, standard costing, introduction to capital budgeting, cost-volume-profit analysis and relevant costs in decision making.

ACCG 301 | INTERMEDIATE ACCOUNTING I (3-0-3)

Prerequisite: a grade of C or higher in ACCG 201 | F, S, SI

This course focuses on theory and applications of financial accounting. It introduces the conceptual framework, the process of creating generally accepted accounting principles, and the fundamentals of financial statements – income statements, balance sheets, and statements of cash flow. Issues examined include cash and receivables, inventories, long-lived tangible and intangible assets. Moreover, the course investigates the foundations and applications of international accounting practices.

ACCG 302 | INTERMEDIATE ACCOUNTING II (3-0-3)

Prerequisite: ACCG 301 | S, SI

This course is a continuation of the Intermediate Accounting I. It continues the in-depth analysis of accounting theory, and procedures underlying preparation of financial statements. Topics covered include short-term and long-term liabilities, stockholders' equity, including dilutive securities and earnings per share, investments, revenue recognition, income taxes, pension and retirement benefits, leases, accounting changes and errors, statements of cash flows, and full disclosure in financial reporting.

ACCG 311 | COST ACCOUNTING (3-0-3)

Prerequisite: a grade of C or higher in ACCG 201, ACCG 211 | F, S, SI

This course examines various tools of cost accounting. It also examines means by which control can be exercised and the types of accounting information that allow for different means of planning and control. It covers the behavioral, quantitative, and qualitative aspects accounting, such as the nature of control, responsibility centers, performance evaluation, pricing of intermediate products, strategic planning, advanced topics in budgeting, costing, the balanced scorecard, executive compensation, and control for differentiated strategies.

ACCG 341 | ACCOUNTING INFORMATION SYSTEMS (3-0-3)

Prerequisite: a grade of C or higher in ACCG 201, ACCG 211 | F

This course provides an overview of major accounting subsystems with an emphasis on computer systems and internal control. It provides an overview of the design of information systems that support the accounting function of a firm. It focuses on business transaction cycles and processes, including Order Entry/Sales/Receivables; Purchase/Payables; Payroll/Human Resources; Fixed Assets; Production; Financing, and the General Ledger in the context of Enterprise Resource Systems (ERSs). Topics covered also include Computer Control and Audit; Computer Crime; and Reporting with XRBL.

ACCG 352 | FRAUD AUDITING AND FORENSIC ACCOUNTING (3-0-3)

Prerequisite: ACCG 302 | S

This course investigates the deceptions in financial and accounting processes. It is concerned with the detection and prevention of financial statement fraud. Topics covered include fraud examination techniques, internal control methodology, financial statement misrepresentation, conversion investigation methods, inquiry methods and fraud reports.

ACCG 401 | ADVANCED ACCOUNTING (3-0-3)

Prerequisite: ACCG 302 | F, S

This course focuses on the nature and structure of accounting information that is generated by the business firm. The main emphasis is not on the process through which accounting information is generated, but on how this information can be used in decision making by business managers. Topics covered include key financial statements and their interpretation, ratio analysis and its uses in performance evaluation as well as its limitations, financial planning and budgeting, use of accounting information for more effective control of operations, economic value added vs. ROI, and other approaches to performance measurement.

ACCG 421 | AUDITING (3-0-3)

Prerequisite: ACCG 301 | F

This course presents both the theoretical and practical aspects of auditing, including the responsibilities and function of the independent auditor. Topics include auditing objectives and concepts, types of audits, auditing standards, auditors' professional code of ethics and auditors' liability, risk and internal control, and the audit process.

ACCG 431 | U.S. TAXATION (3-0-3)

Prerequisite: ACCG 401 | SI

This course covers knowledge applicable to federal income, estate and gift taxation and its application in practice. The content of this course is consistent with the AICPA Federal taxation specification outline tested in the CPA exam. The course covers topics such as taxation of individuals, corporations, partnerships, estates and trusts, exempt organizations, and preparers' responsibilities.

ACCG 441 | INTERNATIONAL ACCOUNTING (3-0-3)

Prerequisite: ACCG 401 | F, S, SI

This course gives a broad overview of the global financial and accounting environment and addresses three distinct, but overlapping topic areas: financial reporting, financial analysis, and planning and control of multinational enterprises. The course covers topics such as financial reporting regimes, harmonization of international accounting differences, international accounting standard setting process, financial reporting issues relating to segment reporting, international financial ratio analysis, business combinations, intangible assets, foreign currency translation, accounting for changes in exchange rates, translation of financial statements, and managerial accounting issues relating to control of and performance measurement for foreign operations.

ACCG 491 | SPECIAL TOPICS IN ACCOUNTING (3-0-3)

Prerequisite: Senior Status or approval of the Chair, a grade of C or higher in ACCG 201 | Upon demand

This course presents a critical study of theory, research and practical applications related to advanced topics in accounting, not covered in any other accounting course. The specific topics will be determined by the interests of the students and the instructor.

AIMC 201 | PRINCIPLES OF ADVERTISING AND INTEGRATED MARKETING COMMUNICATIONS (IMC) (3-0-3)

Prerequisite: *MKTG 201 | F, S, SI*

This course introduces students to the field of integrated marketing communications (IMC) and its role in the marketing mix. The course also provides students with an understanding of different media choices, such as advertising, sales promotion, public relations, personal selling, direct marketing, digital and social media. Students examine basic communication theories and media concepts. Students further learn how to apply their knowledge in determining media objectives and strategies. Special attention is given to the creative product across all media and tools.

AIMC 331 | HISTORIC AND CONTEMPORARY ISSUES IN ADVERTISING and IMC (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 201 | S*

This course examines historic and contemporary issues (political, social, economic, technological, Internet, legal, arts and cultural) related to Advertising, Public Relations and Integrated Marketing Communications in local, regional and global contexts. Students also implement creative strategies in solving problems related to Advertising and IMC issues.

AIMC 401 | CREATIVE STRATEGY AND RHETORIC (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 201 | S*

This course provides students with a background knowledge in rhetorical theories and cultural innovation strategies as applied in developing written, spoken, visual, and other creative strategies for multimedia and interactive Advertising, PR, and Integrated Marketing Communications (IMC).

AIMC 411 | MEDIA PLANNING (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 201 | F*

This course entails in-depth study of the media planning functions within the Integrated Marketing Communications (IMC) process. Students learn the relationship between marketing strategy and media planning, and the strategic media planning process. Topics include consumer insight and analytics; digital and non-digital media analytics; inter-media comparisons; qualitative media evaluation; media budget determination and allocation; media testing and experimentation.

AIMC 421 | STRATEGIC PLANNING AND MEASUREMENT FOR ADVERTISING AND IMC (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 201 | F*

This course examines the role of strategic decision-making in IMC marketing plan formulation. Students learn how to select and evaluate appropriate media outlets. Students also examine creative communications metrics and implement strategies in solving problems related to Advertising and IMC campaigns. The course further involves empirical research to issue-resolution.

AIMC 431 | CAMPAIGN DEVELOPMENT AND EVALUATION (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 421 | S*

This is the capstone course of the Advertising and Integrated Marketing Communications major. Students spend the entire term working in teams to respond to a challenging real world case. The response consists of a fully developed IMC strategy and plan, together with executional solutions across a wide variety of communications disciplines. Class times are used for instructor facilitation, team meetings and lecture/discussion on topics germane to the case, such as media planning, website construction, and sales promotion. Faculty other than the instructor of record and outside practitioners also make pedagogical contributions to the course.

AIMC 481 | STUDY INTERNSHIP (0-25-3)

Prerequisites: *AIMC 431, Senior Status and approval of the Chair | SI, and Upon demand*

Students spend 25+ hours/week employed by an advertising/communications/marketing firm. This internship examines students' progress in their chosen field of specialization under the joint supervision of the faculty supervisor and their supervisor in the workplace.

AIMC 491 | SPECIAL TOPICS IN IMC (3-0-3)

Prerequisite: *a grade of C or higher in AIMC 201, Senior Status or approval of the Chair | SI, and Upon demand*

This course offers an advanced topics in Advertising and IMC which are not covered by other course offerings. The specific topic will be determined by student/instructor interest. Students should check with the Department Chair to determine course content for a specific semester.

ANTH 201 | INTRODUCTION TO CULTURAL ANTHROPOLOGY (3-0-3)

Corequisite: ENGL 101 | Upon demand

This course introduces students to the rich and distinctive ways through which anthropologists understand the cultural and social world. It focuses on the writings of anthropologists and their research, examining key areas of interest such as kinship, religion, language, gender, politics, and the economy.

ANTH 311 | CULTURE AND SOCIETY IN POSTCOLONIAL AFRICA (3-0-3)

Corequisite: ENGL 102 | Upon demand

This course uses an anthropological lens to explore cross-cultural encounters, clashes, dilemmas, and understandings of colonialism and post-coloniality across the African continent. Students examine popular representations of culture in different African societies with the objective of contextualizing problems such as poverty, conflict, dependence, while countering prevailing narratives about Africa. Topics addressed include colonialism, post-colonialism, social organization, ethnicity and nationality, politics, globalization, religion, gender, and popular culture.

ARCH 101 | ARCHITECTURAL DESIGN STUDIO I (0-8-4)

F, and Upon demand

In this foundation course, the student is introduced to the fundamentals of manual drafting and the tools used in this technique. Some of the goals are to learn basic architecture drafting vocabulary, line quality, lettering and drafting conventions for a site, plot, building, including roof and floor plans, interior and exterior elevations, and building sections. This course involves presentation techniques axonometric and perspective drawings. Anthropometrics and ergonomics will also be introduced.

ARCH 102 | ARCHITECTURAL DESIGN STUDIO (II 0-12-6)

Prerequisite: ARCH 101 | S, and Upon demand

ARCH 102 builds upon the foundation skills acquired in ARCH 101. The students recognize fundamental concepts and basic architecture elements. In this course students discuss design process that includes the role of research, analysis, and spatial organization. Also, students work individually on a number of projects that introduce them to different phases including research, conception, problem formulation and resolution and project layout and presentation. In addition, students work in teams on design projects concentrating on analysis and decision making.

ARCH 151 | HISTORY AND THEORY OF ARCHITECTURE I (3-0-3)

S, and Upon demand

This course examines the development of architecture and urbanism from pre-history to circa 1400 by depicting the different architectural languages and terminologies used by different styles. Emphasis is placed on the historical and intellectual context of selective examples of architecture, along with their environmental, technological, and social relevance.

ARCH 201 | ARCHITECTURAL DESIGN STUDIO III (0-12-6)

Prerequisite: ARCH 102 | F, and Upon demand

This second year studio course focuses upon the understanding of architectural convention in relation to cultural, sociological and general human related aspects. Based on a socio-cultural understanding of design approach students are encouraged to develop their analytical problem-solving skills which function as the basis for design invention and as the foundation of ethical action in the process of architectural designing.

ARCH 202 | ARCHITECTURAL DESIGN STUDIO IV (0-12-6)

Prerequisites: ARCH 201, ARCH 211 | S, and Upon demand

This is a studio course that introduces the strategies of architectural design. Students develop an architectural project based on a building program and site. Issues concerning building assemblies, structural systems, building envelope systems, and basic building systems are covered. The integration of these issues into building design is complemented by studio exercises.

ARCH 211 | MATERIALS AND METHODS OF CONSTRUCTION (3-0-3)

Prerequisite: ARCH 101 | F, and Upon demand

This course introduces students to commonly used construction materials and their respective methods of construction. Students also study the major building components from foundation to roofing including the building envelope and acquire an overall understanding of the building assembly.

ARCH 254 | HISTORY AND THEORY OF ARCHITECTURE II (3-0-3)

Prerequisite: ARCH 151 | F, and upon demand

This course examines the development of architecture and urbanism from circa 1400 to present, by depicting the different architectural languages and terminologies used by different styles in the Arabian Gulf and worldwide. Emphasis is placed on the historical and intellectual context of selective examples of architecture, along with their environmental, technological and social relevance.

ARCH 294 | FILM AND ARCHITECTURE (3-0-3)

Prerequisite: ARCH 202 | F, and Upon demand

The course film and architecture will introduce students to tools for analysis and exploration of the relation between architecture and film both as phenomena of time and space. Students will look at the source and portrayal of architectural expression in film from its development of early to modern manifestation. This course enhances the theoretical and experimental understanding of filmic and architectural structure.

ARCH 301 | ARCHITECTURAL DESIGN STUDIO V (0-12-6)

Prerequisite: ARCH 202, ARCH 351, DDFT 341 | F, and Upon demand

This third year studio course focuses upon the understanding of Architectural theories and methodologies, their implication on understanding and approaching design methods. Students are encouraged to develop new ways of analysis and criticism for architectural objects. This will be the basis for the process of design invention of this course.

ARCH 302 | ARCHITECTURAL DESIGN STUDIO VI (0-12-6)

Prerequisites: ARCH 301, DDFT 351, Corequisite ARCH 321 | S, and Upon demand

In this studio course, students design environmentally responsive buildings at the inception stages of the design process, integrating structural systems and construction technologies.

ARCH 311 | STRUCTURAL ANALYSIS (3-0-3)

Prerequisite: ARCH 211, PHYS 201 | F, and Upon demand

This course provides students with basic knowledge of structural analysis, in preparation for structural design. Students will study the behavior of structures through an understanding of the concepts of load and load path, internal forces, different types of stress, structural materials, the role of geometry in structural design and finally basic mathematical calculations.

ARCH 312 | STRUCTURAL DESIGN (3-0-3)

Prerequisite: ARCH 311 | S, and Upon demand

This course prepares students for understanding the impact of structural systems on architectural design and for making selections based on the necessary knowledge of aspects of structure. The course covers the relevant structural materials and properties, structural elements and systems.

ARCH 321 | ENVIRONMENTAL AND BUILDING SERVICE SYSTEMS (3-0-3)

Prerequisite: ARCH 201 | S, and Upon demand

This course exposes the students to the notion of sustainability and the way it informs architecture and site design thinking. Students understand how environmental systems can reduce the energy consumption related to heating, cooling, daylighting, ventilation and acoustics. Students also learn about building services, including Mechanical, Electrical and Plumbing (MEP) as well as vertical transportation within the building.

ARCH 322 | BASIC ELEMENTS OF LANDSCAPE ARCHITECTURAL DESIGN (3-0-3)

Prerequisite: ARCH 202 | SI, and Upon demand

This course presents the thoughts and key design theories fundamental to landscape architecture in simple words and illustrations, it also offers the vocabulary, significance, characteristics, potential uses, and design guidelines for landform, plant materials, buildings, pavement, site structures, and water in landscape architectural design. It will help students overcome common mistakes and misconceptions typical in the early phases of their design career and will heighten their understanding and awareness of the major physical components of the outdoor environment.

ARCH 342 | PORTFOLIO DESIGN IN ARCHITECTURE (3-0-3)

Prerequisite: ARCH 302 | Upon demand

This course introduces students to how to plan, design, and produce their portfolio from their design projects, which contain sources for their conception and a trajectory for their design development. It will also explain how to search for clues to your core design inspiration and discuss how to be more open to new pathways to problem analysis and

problem-solving inspiration. Finally, students can apply digital desktop publishing and image processing software techniques to produce more not only competitive but also professionally informed.

ARCH 351 | THEORY OF ARCHITECTURE (3-0-3)

Prerequisites: ARCH 254 | S, and Upon demand

This advanced lecture course focuses upon the understanding of architectural theories and methodologies, and their implications for understanding and analyzing architectural design. Students are encouraged to apply theories to architectural objects.

ARCH 370-375 | ARCHITECTURE STUDY TOUR (3)

Prerequisite: ARCH 302 | Upon demand

In this course, students analyze specific aspects in architecture and/or urban design in global context, through direct analysis of actual case studies, or by participation in relevant worldwide events and exhibitions.

ARCH 380-385 | SPECIAL TOPICS IN ARCHITECTURE (3-0-3)

Prerequisite: ARCH 202 | Upon demand

This is an advanced course in which students participate in topics to be selected by the instructor, with the approval of the Chair, and which develops an aspect of design and/or presentation. Research, critical analysis, application of the research and analysis to the design, and presentation will be required in the course.

ARCH 401 | ARCHITECTURAL DESIGN STUDIO VII (0-12-6)

Prerequisite: ARCH 302 | F, and Upon demand

In this course, students survey the main theories of urban design by analyzing several case studies throughout recent history. They also discuss the multidimensional and interactive aspect of urban design and its relation to architecture, and design a real context urban project in order to integrate the physical, environment, socio-cultural, economic, legal and philosophical elements that shape cities.

ARCH 402 | ARCHITECTURAL DESIGN STUDIO VIII (0-12-6)

Prerequisite: ARCH 321, ARCH 401, ARCH 431, DDFT 475 | S, and Upon demand

In this design studio students are not only required to consolidate their knowledge and abilities developed under previous studios, but should also demonstrate well rounded competencies in integrating the technical aspects of architectural design, with particular emphasis given to construction materials and technology, structural design, Mechanical, Electrical & Plumbing (MEP) solutions and working drawings documentation.

ARCH 412 | CONSTRUCTION MANAGEMENT AND BUILDING ECONOMICS (3-0-3)

Prerequisite: ARCH 211 | F, and Upon demand

ARCH 412 introduces students to the basic principles and techniques of management and Building Economics. Students are introduced to the principles and practices of estimating project cost, scheduling methods, and controlling techniques, as well as time value of money, financial feasibility and cash flow analyses.

ARCH 423 | SUSTAINABLE URBANISM (3-0-3)

Prerequisites: ARCH 202, ARCH 321 | S, and Upon demand

This course combines expertise in New Urbanism with a thorough understanding of environmental issues and techniques. It also exposes students to a comprehensive and technically informed way on how to design and build places that are environmentally responsible and also gratifying to inhabit.

ARCH 431 | LIFE SAFETY AND CODES (3-0-3)

Prerequisite: ARCH 202 | F, and Upon demand

This course covers the process of an architectural project starting from the inception stages. Topics include programming, developing design requirements and standards, as well as building codes, including those incumbent to safety and accessibility.

ARCH 441 | PROFESSIONAL PRACTICE, ENTREPRENEURSHIP AND ETHICS (3-0-3)

Prerequisites: ARCH 431 | S, and Upon demand

Students develop an understanding of the business and practice of Architecture and also examine innovative entrepreneurial models. Topics include professional services and contracts, firm leadership, strategic planning, team building and staff development, standards of professional, legal, and ethical conduct, marketing, firm and project financial management, risk and liability, construction administration, and dispute resolution.

ARCH 501 | ARCHITECTURAL DESIGN STUDIO IX (0-12-6)

Prerequisite: ARCH 402 | F, and Upon demand

In this course, students prepare a thesis proposal which consists of collecting, analyzing, and writing a summary about data pertinent to a particular building type and use it to produce a preliminary design to be carried out in detail during the final semester. Students will build a comprehensive knowledge as to building standards and norms leading to space programming, codes, and regulations and design theory. Throughout the process, students will learn to plan, structure and write a research document as well as developing familiarity with research techniques and methods in the field of Architecture.

ARCH 502 | ARCHITECTURAL DESIGN STUDIO X (0-12-6)

Prerequisites: ARCH 431, ARCH 501 | S, and Upon demand

This is a capstone course in which students implement their thesis research by developing a project that incorporates all the principles of design demonstrating a comprehensive understanding of architectural design and evidence of professional capability. A final presentation of the resulting design to an advisory panel will be required.

ARCH 561 | INTERNSHIP (0-25-2)

Prerequisite: Senior Status and Portfolio | SI, and Upon Demand

The internship provides students with practical, on-the-job experience which allow them to integrate theory with “real world” situations. The internship is academically supervised by a faculty member and professionally supervised by the company’s internship supervisor who provides feedback to the university about the student’s progress. (The course is 3 credits for students who joined before AY 2023-2024)

ARTS 101 | INTRODUCTION TO THE ARTS (3-0-3)

Corequisite: ENGL 101 | F, S

This course introduces students to the art of various cultures, with a focus on the role of visual arts in building and responding to cultural and historical contexts. Students will develop skills in visual and verbal analysis of art.

ARTS 200 | HISTORY OF ART I (3-0-3)

Prerequisite: ENGL 102 | F, S

This course surveys global developments in art and architecture from pre-history through 1400. Artworks will be analyzed in their historical, sociological and political contexts through visual presentations.

ARTS 201 | HISTORY OF ART II (3-0-3)

Prerequisites: ENGL 102 | F, S

This course surveys the major developments in world art and architecture from the European Renaissance through the 20th Century. The cultural and sociological contexts of art and the changing conditions of the artists and art production, as reflected in the new styles and movements of this period are examined.

ARTS 202 | HISTORY OF ART III (3-0-3)

Prerequisites: ENGL 102 | S

This course explores the art of the 20th century and through the first decade of the 21st, focusing on the transformation from Modernism to the post-modern context of arts and culture in contemporary societies. It examines the historical and theoretical background necessary for the understanding of seminal artworks and major art movements, and familiarizes students with critical concepts.

BDSC 401 (Replaces MGMT 314 Business process simulation) | BUSINESS PROCESS MODELING AND ANALYTICS (3-0-3)

Prerequisites: BUSI 331, QUAN 301 | F, S

This course focuses on the efficiencies of business processes and how these efficiencies consequently effect the organizational performance. The content consists of modeling a business problem, run simulations and collect data through the use of Discrete Event Simulation software.

BIOL 201 | PRINCIPLES OF BIOLOGY (3-0-3)

Corequisite: ENGL 101 (students will not receive credit for both BIOL 201 and SCIE 201) | F, S, SI

This course introduces students to principles of biology including basic concepts in biochemistry and bioenergetics, cell biology, genetics, biodiversity, ecology and sustainability. Students will learn mechanisms, practices, technologies and applications that promote better health and sustain natural resources in the environment.

BIOL 202 | GENERAL BIOLOGY I W/Lab (3-3-4)

Prerequisite: None | F, S

This course introduces students to the basic aspects of cell structure, heredity, diversity, classification, evolution, and energy transfer through living organisms. Students will explore a variety of biological phenomena with emphasis on an inquiry-based approach to promote critical thinking and problem-solving skills.

BIOL 203 | GENERAL BIOLOGY II W/Lab (3-3-4)

Prerequisite: BIOL 202 | F, S

This course offers a general overview of structure and life processes in animals. It provides an emphasis on comparative animal physiology, showing structural, functional and behavioral adaptations to environmental challenges.

BIOL 210 | ECOLOGY W/Lab (3-3-4)

Prerequisite: BIOL 202 | F

This course introduces students to fundamental principles and skills in the field of ecology. Topics include diversity of physical environments, species interactions and adaptations, population dynamics, evolution, and energy and nutrient flow within ecosystems. Students will examine the effects of human activities on ecosystems and address global issues such as climate change and ecological conservation.

BIOL 213 | CELL BIOLOGY W/Lab (3-3-4)

Prerequisite: BIOL 203 | F, S

This course introduces students to principles of cell biology, including cell-cell interaction, cell-extracellular matrix interaction, and the cells' behavior in their microenvironment. Students are exposed to different tools and methods used to investigate the basic functions of the cell, the intracellular sorting within its compartments, and key cell processes.

BIOL 283 | GENETICS W/Lab (3-3-4)

Prerequisite: BIOL 203 | F, S

This course introduces the fundamental principles of genetics and genomics. The course topics address transmission genetics and molecular genetics as fully integrated subjects. The basic processes of gene transmission, mutation, expression, and regulation are also covered.

BIOL 307 | EVOLUTION (3-0-3)

Prerequisite: SCIE 311 | F, S, SI

This course examines concepts and theories related to evolution, ecology, diversity, and the adaptation of living things to their natural environment. Topics include the origins of diversity, evolutionary change, phylogeny and classification, diversity in form and function, evolution by natural selection, modes of speciation, and long-term trends in evolution and adaptations.

BIOL 311 | INTRODUCTION TO BIOTECHNOLOGY (3-0-3)

Prerequisites: BIOL 201 or BIOL 202, or SCIE 201, ENGL 101, MATH 101 (or higher) | S

This course is designed to introduce students to the basic principles of biotechnology and its applications. It will introduce students to fundamental scientific concepts in molecular biology and biotechnology emphasizing modern, cutting-edge emerging tools and applications in this area. Medical applications of biotechnology, industrial biomanufacturing, bioremediation, forensic analysis, cloning and transgenic techniques, and aquaculture are some of the topics that students will be introduced to in this course. Students will have an opportunity to consider the ethical implication of emerging biotechnologies and their impact on communities.

BIOL 323 | Human Anatomy and Physiology W/Lab (3-3-4)

Prerequisites: BIOL 203 | F

This course provides an in-depth study of human anatomy and physiology, emphasizing integrative physiological mechanisms, organ system interactions, and clinical applications. It includes a significant laboratory component that incorporates virtual reality (VR) modules and real-life experiments to enhance understanding of anatomical structures and physiological processes.

BIOL 325 | ANIMAL PHYSIOLOGY (3-0-3)

Prerequisite: BIOL 203 | F, S, SI

This course focuses on the fundamental principles of animal physiology. It covers hormone and neural signaling, sensory systems, circulatory and respiratory regulation, kidney structure, and reproduction in mammals.

BIOL 327 | NEUROPHYSIOLOGY (3-0-3)

Prerequisite: BIOL 203 | F, S, SI

This course offers an introduction to the field of neurophysiology. Topics include basic neuronal cell physiology, signaling cascades and pathways, cellular neurobiology, neurodegenerative diseases, behavioral neuroscience, and behavioral disorders. Additional topics include the nervous system (peripheral and central, PNS & CNS), sensory modalities, and central processing of sensory information and pathways, including special senses. In addition, higher brain functions such as learning, memory, language and communication will be addressed.

BIOL 329 | IMMUNOBIOLOGY (3-0-3)

Prerequisite: BIOL 213 | F, S, SI

This course provides an overview of the immune response and its involvement in health and disease. Course topics include immunity, structure and function of the immune system, antigens and antibodies, complement, genetic basis of the immune response, humoral and cellular immunity, immunological tolerance, organ and tissue transplantation, allergies, and autoimmunity.

BIOL 331 | DEVELOPMENTAL BIOLOGY (3-0-3)

Prerequisite: BIOL 203 | F, S, SI

The course offers an overview of the fundamental principles and mechanisms that govern development in animals, with an emphasis on the cellular and molecular aspects.

BIOL 333 | ENDOCRINOLOGY (3-0-3)

Prerequisite: BIOL 213 | F, S, SI

This course introduces the endocrine system. Major topics include the structure, synthesis, secretion, role, and regulation of hormones. It also deals with related diseases and disorders.

BIOL 345 | PLANT PHYSIOLOGY W/Lab (3-3-4)

Prerequisite: BIOL 202 | F, S

This course focuses on the physiology and biochemistry of plant growth and development in both normal and extreme environments. Topics include plant-water relations, mineral nutrition, hormones, and growth regulators, as well as how plants sense the environment and respond to cold, heat, drought, flooding, pathogens, and pests. It also addresses recombinant DNA technology and environmentally-friendly means of using plants to combat disease and pollution.

BIOL 351 | PRINCIPLES OF BIOCHEMISTRY (3-0-3)

Prerequisite: BIOL 203, **Corequisite:** CHEM 214 | F, S

This course explores the macromolecules and fundamental metabolic pathways of eukaryotes, with an emphasis on human systems. Students study the structure and function of amino acids and proteins, the structure and metabolism of carbohydrates and lipids, and the structure and biochemical characteristics of nucleotides and nucleic acids. Topics also include the thermodynamic principles and biochemical pathways that drive life processes as well as their regulatory mechanisms.

BIOL 361 | MICROBIOLOGY W/Lab (3-3-4)

Prerequisite: BIOL 203 | F, S

Microbiology explores the biology of microorganisms. Course topics include microbial cell structure and function, physiology, metabolism, genetics, diversity, and ecology. Applied aspects of microbiology are also covered, including biotechnology, the role of microorganisms in environmental processes, and medical microbiology. Laboratory experiments will cover the subjects and theories introduced in course work. Laboratory experiments will cover the subjects and theories introduced in course work.

BIOL 387 | MOLECULAR BIOLOGY W/Lab (3-3-4)

Prerequisite: BIOL 283 | F, S

This course introduces students to molecular biology. Key concepts include the molecular mechanisms of gene expression and regulation, the fundamental aspects of recombinant DNA technology, protein structure and function, and the signaling pathways that control gene activity. Students study the regulation of the cell cycle, the molecular basis of illnesses, and genetic engineering applications.

BIOL 389 | FUNDAMENTALS OF BIOINFORMATICS (3-0-3)

Prerequisites: BIOL 283, BIOL 387 | F, S

This course focuses on the applied aspects of bioinformatics. Students learn how to work on genomics and proteomics data, and they determine the role of genetic variabilities in evolution of biomolecules and organisms, which forms the basis for the diversity seen among pathogens and industrially beneficial organisms. Special emphasis is given to the relationship between knowledge of bioinformatics and current advancements in biomedical research.

BIOL 391 | SPECIAL TOPICS IN BIOLOGY (3-0-3)

Prerequisite: BIOL 203 | F, S, SI

This course focuses on contemporary developments in the field of Biology. Subjects include cancer, cloning, theoretical biology, and other advances in technical and theoretical knowledge.

BIOL 395 | FORENSIC BIOLOGY W/Lab (3-3-4)

Prerequisites: BIOL 283 | F, S

This course examines the biological and environmental principles applied in forensic investigations, focusing on evidence collection, forensic analysis, and data interpretation. Emphasizing both traditional and emerging forensic techniques, students will examine legal challenges, case studies, and technological advancements in the field of forensic biology.

BIOL 398 | BIOLOGY INTERNSHIP (0-25-3)

Prerequisites: Senior Status | SI

With the aid of a supervising instructor and under the direct supervision of a member of the host organization, students participate in a practical, on-site internship in which theoretical principles are applied to “real world” situations.

BIOL 498 | UNDERGRADUATE RESEARCH IN BIOLOGY (3-0-3)

Prerequisites: BIOL 203, Senior Status | F, S, SI

This advanced research-intensive course provides students with hands-on training in designing and conducting biological research. Students develop research proposals, perform laboratory experiments, analyze data, and communicate findings through a publication-style report and oral presentation. Emphasizing critical thinking, literature evaluation, and scientific methodology, the course prepares students for graduate studies and careers in biological sciences, biotechnology, and medicine.

BUAI 140 | INTRODUCTION TO PROGRAMMING FOR BUSINESS APPLICATIONS (3-0-3)

Prerequisites: Placement by computer proficiency examination or COMPI01 with a grade of C or higher | F

This course introduces undergraduate business students to the fundamentals of programming, with a focus on solving real-world business problems. The course covers basic programming concepts such as data types, control structures, functions, and data manipulation, all within a business context. Students will learn to develop simple Python scripts to automate tasks, perform basic data analysis, and create simple applications that enhance business processes. The hands-on assignments and a final project will provide practical experience, allowing students to develop essential programming skills relevant to the business environment. By the end of the course, students will be prepared to use programming as a tool for business decision-making, process optimization, and data-driven analysis.

BUAI 250 | INTERMEDIATE PROGRAMMING TECHNIQUES FOR BUSINESS (3-0-3)

Prerequisites: BUAI 140 | F

This course builds on foundational programming skills to explore intermediate programming techniques with a focus on business analytics. Students will use Python and R to perform data manipulation, statistical analysis, and data visualization to solve complex business problems. The course covers advanced data structures, data visualization, machine learning basics, and techniques for processing and analyzing large datasets. Practical assignments and a final project provide hands-on experience with advanced programming techniques to enable students to develop data-driven solutions for real-world business challenges.

BUAI 303 | NEXT GEN MARKETING (3-0-3)

Prerequisites: MKTG 201, QUAN 301 | S

This course provides an explanation of how marketing theories and Artificial Intelligence (AI) interact and impact each other. The aim is to make the student navigate the ever-changing marketing landscape in a more effective way. The course also emphasizes the use of AI-powered marketing technologies and techniques. Alongside course material, students actively participate in academic discussions, group assignments, and projects that focus on the latest advancements in the field.

BUAI 310 | DATA STRUCTURES AND AI SYSTEMS IN BUSINESS (3-0-3)

Prerequisites: BUAI250, QUAN350 | F

This course explores the application of data structures and artificial intelligence (AI) in developing systems for business environments. It covers fundamental data structures, algorithms, and AI techniques such as search algorithms, machine learning, and neural networks, emphasizing their practical applications in business. The course focuses on solving business problems through efficient data management and AI-driven solutions, providing a strong foundation in both theoretical and practical aspects of data structures and AI systems.

BUAI 320 | AI IN FINANCE (3-0-3)

Prerequisites: BUAI 310, FINA 201 | S

AI has become highly connected with operations in areas such as banking, consumer finance, real estate, and insurance. This course focuses on the impact of artificial intelligence (AI) in the financial sector and familiarizes students with the latest technological advancements, applications, and trends that have revolutionized this industry. The objective is to provide students with an understanding of AI to navigate today's financial landscape more effectively while considering regulations and compliance standards.

BUAI 322 | LEADERSHIP IN DATA-CENTRIC ORGANIZATIONS (3-0-3)

Prerequisites: MGMT 201 | F

This course explores the dynamics of leadership within organizations that heavily rely on data for decision making. Students will gain insight into the challenges and opportunities faced by leaders in such environments. The course also emphasizes the importance of data driven strategies and the cultivation of a culture centered around them.

BUAI 341 | AI INTEGRATION: FROM BLUEPRINTS TO IMPLEMENTATION (3-0-3)

Prerequisites: FINA 201, MGMT 201, QUAN 301, BUSI 331, MKTG 201, MGMT 313 | F

This course integrates artificial intelligence (AI) from conceptual blueprints to tangible implementation. Students investigate how AI can streamline operations and revolutionize companies to transition into an AI-augmented future seamlessly. Moreover, students dissect the obstacles and opportunities stemming from the assimilation of AI technologies in various sectors. Most importantly, students learn how to strategize to overcome potential pitfalls while optimizing the utilization of AI in real-world scenarios.

BUAI 420 | ADVANCED FINANCIAL ANALYTICS WITH MACHINE LEARNING (3-0-3)

Prerequisites: FINA 201, BUAI 320 | F, S

This course dives into the applications of Artificial Intelligence in finance. It provides more advanced knowledge of time series forecasting, neural networks, algorithmic trading, and other important models like ARIMA, GARCH, and LSTM. By the end of the course, students will be able to identify the most adequate risk management strategies and optimize portfolios using advanced AI techniques. In addition, students will learn how to perform sentiment analysis and interpret investors' behaviors. State-of-the-art tools will be employed during the different sessions (e.g., Python), and real-world case studies will be analyzed to set the path for the students to become future leaders in fintech innovation.

BUAI 453 | MACHINE LEARNING FOR BUSINESS DECISIONS (3-0-3)

Prerequisites: BUAI 310 | S

This course provides an in-depth introduction to machine learning (ML) concepts and techniques and their application in business decision-making. Students will learn to use Python and R to build predictive models, analyze business trends, and develop data-driven strategies. The course covers supervised and unsupervised learning, feature engineering, model evaluation, and the deployment of machine learning models in a business context. Real-world case studies will be used to provide hands-on experience in applying these techniques to solve business problems, such as customer segmentation, churn prediction, and sales forecasting. By the end of the course, students will be equipped to utilize machine learning as a tool for strategic business decisions.

BUAI 489 | FINAL PROJECT (3-0-3)

Prerequisites: Senior status, Completion of all Business Foundation and Core courses, Completion of three Artificial Intelligence for Business Courses | S

This course specifically caters to the application of AI in the business realm, giving students an opportunity to put their technical skills and business knowledge into practice by addressing real life business situations. As part of this course, students are expected to prepare a consultancy report offering an AI based solution for an established company. Throughout the course, students will delve into the challenges that arise when creating AI solutions or adopting AI

technologies. The course also emphasizes the benefits AI brings to businesses and the society as a whole. In addition, the students work closely with AUD's Entrepreneurship and Innovation Center (AEIC), providing guidance on AI-related subjects to their fellow AUD students on the entrepreneurship path.

BUSI 101 | INTRODUCTION TO BUSINESS (3-0-3)

F, S, SI, SII

An introductory survey of the business world, with consideration of the structure and forms of business enterprise, the nature of business relationships, and the diversity and choice of business careers. This course explores perceptions and misperceptions of business and its role in society, in a multicultural setting.

BUSI 121 | ENTREPRENEURSHIP AND INNOVATION (3-0-3)

F, S

This course is an overview of small business management and includes methods and procedures for establishing a small business; problem solving techniques required for successful operations; entrepreneurial traits and risks; location selection; and franchising.

BUSI 201 | BUSINESS COMMUNICATIONS (3-0-3)

Prerequisites: BUSI 101, ENGL 101 | F, S, SI, SII

Students in this course will learn the dynamics of human interaction in the workplace. The focus of the course is designed to increase the student's understanding and implementation of effective communication behaviors and skills exhibited through written and oral communication forms. The fundamentals of business communication will introduce rhetorical principles, cultural adaptation and compositional practices necessary for successful communication in a range of professional and academic settings.

BUSI 211 | BUSINESS ETHICS (3-0-3)

Prerequisite: BUSI 201 (also applies to non-Business Majors) | F, S, SI

This course introduces students to the ethical context of business operating domestically as well as internationally. This course introduces students to a cooperative framework, which will embrace the foundations of regional differences and influences with respect to ethical decision making. The difficult issue of ethical relativism and other problems associated with multiple ethical systems are examined from theoretical as well as case-based applied perspectives.

BUSI 221 | PERSONAL FINANCIAL MANAGEMENT (3-0-3)

Prerequisite: MATH 200 (not open to students in the Finance Major) | F

This course covers fundamentals of personal finance including salary and compensation, budgeting, savings, investments, renting, establishing a home, property acquisition, installment contracts, purchase acquisition, scams and frauds, credit, insurance, retirement, taxes, and other financial issues.

BUSI 251 | STARTUP ENTREPRENEURSHIP PROJECT (3-0-3)

Prerequisite: BUSI 121, ENGL 101 | F, S

In this course, students learn about the stages of customer discovery/empathy, prototyping, segmentation, positioning, and pitching. Under the guidance of course facilitator and startup mentor, students develop go-to-market strategy for their business idea and network with potential investors.

BUSI 301 | BUSINESS RESEARCH (3-0-3)

Prerequisites: BUSI 101, QUAN 201 | F, S, SI

Business analysts, managers and other professionals engaged in managerial and supervisory tasks are required to conduct research projects, or to supervise staff undertaking programs under their direction and to evaluate proposals and work completed by contracted professionals. To fulfill these responsibilities, managers must possess knowledge of research methodologies and techniques and be competent in their application. This course explores the role of research in business decision-making. The aim is to introduce students to the principal stages, terminology, concepts, processes and methodologies used in conducting research, and reporting and reviewing the results of research, and to enhance skills, knowledge and competencies in conducting research. Also, a major part of this course is dedicated to the development and execution of a business research project.

BUSI 311 | BUSINESS LAW I (3-0-3)

Prerequisites: *BUSI 101, BUSI 211 | F, S, SI*

This course serves as an introduction to the issues arising in the legal environment in which businesses operate. Consideration is given to the law of contracts, business torts, warranties, agency law and business formation including potential liability exposure.

BUSI 312 | BUSINESS LAW II (3-0-3)

Prerequisite: *BUSI 311 | F, S*

This course is a continuation of the introductory business law course and examines the following areas of law: corporate mergers, sales and lease contracts, negotiable instruments, debtor-creditor relationships including secured transactions and creditors rights and bankruptcy, intellectual property and internet law, securities regulations, the international legal environment and labor and employment law including discrimination.

BUSI 321 | BUSINESS IN THE INTERNATIONAL ENVIRONMENT (3-0-3)

Prerequisite: *ECON 202 | F, S, SI*

Consideration is given to comparative analysis of market conditions and business practices in the global economy, with an emphasis on international economic factors and institutions, including trade, financing, exchange rates, development and government policies. Selected topics in international management are covered.

BUSI 331 | MANAGEMENT OF INFORMATION SYSTEMS (3-0-3)

Prerequisites: *COMP 101, or BUAI 140, MATH 200 | F, S, SI, SII*

This course introduces students to the dynamic environment of Information Systems (IS) and Information Technology (IT). IS and IT influence every aspect of business. This course has 3 main topics: (1) using IS/IT for competitive advantage, (2) core IS/IT skills and management, and (3) IS/IT as an agent of change in all functional areas of business.

BUSI 481 | INTERNSHIP (0-25-3)

Prerequisite: *Senior Status and approval of the Chair | SI and Upon demand*

With the aid of a supervising instructor, and under the direct supervision of a member of the host organization, the student participates in a practical onsite internship in which theoretical principles are applied to work situations. Upon the end of the internship, the student submits a report to the supervising instructor.

CABR 275 | COURSE ABROAD (3)

Prerequisites: *ENGL 102, approval of dean | Upon demand*

Students travel to international cities to visit iconic locations and leading regulatory and professional institutions. The theme for each course abroad is chosen in advance from academic disciplines such as history, art, business or technology with faculty members serving as course leaders and facilitators. Scheduled class meetings are held before and after the trip, as part of the course requirements.

CHEM 101 | INTRODUCTION TO CHEMISTRY (3-0-3)

Prerequisite: *None | F, S, SI*

This course exposes students to fundamental concepts in chemistry, namely the atomic structure and properties of matter, periodicity in elements, chemical reactions and stoichiometry, molecular geometry, and quantum mechanics.

CHEM 200 | PRINCIPLES OF CHEMISTRY W/Lab (3-3-4)

Prerequisite: *MATH 095 (students will not receive credit for both CHEM 200 and CHEM 201) | F, S, SI*

This course introduces students to the fundamental laws and theories of chemistry. Topics include atomic structure, bond theory, stoichiometry, properties of matter, chemical thermodynamics and kinetics, electrochemistry, and an introduction to organic chemistry.

CHEM 201 | GENERAL CHEMISTRY (3-0-3)

Prerequisite: *MATH 095 (students will not receive credit for both CHEM 200 and CHEM 201) | F, S, SI*

This course introduces students to the fundamental laws and theories of chemistry. Topics include atomic structure, bond theory, stoichiometry, properties of matter, chemical thermodynamics and kinetics, electrochemistry, and an introduction to organic chemistry.

CHEM 205 | ANALYTICAL CHEMISTRY (3-0-3)

Prerequisite: CHEM 201 | F, S, SI

This course is an introduction to analytical chemistry. Topics discussed include activities and activity coefficients, equilibrium calculations in complex systems, various types of titrations, electrochemistry, and reaction kinetics.

CHEM 211 | ORGANIC CHEMISTRY I W/Lab (3-3-4)

Prerequisite: CHEM 201 | F, S

This course introduces principles of organic chemistry. Topics include structures, properties and chemical reactivity of organic compounds, stereochemistry and reaction mechanisms.

CHEM 214 | ORGANIC CHEMISTRY II W/Lab (3-3-4)

Prerequisite: CHEM 211 | F, S

This course advances students' understanding of the fundamental principles of organic chemistry. It focuses on the nomenclature, chemical and physical properties of aromatic compounds, carbonyl compounds, carboxylic acids and their derivatives, reaction mechanisms and identification of molecular structure using spectroscopic methods.

COMM 101 | INTRODUCTION TO GLOBAL MEDIA (3-0-3)

Corequisite: ENGL 101 | F, S

The course provides an overview of the history of mass communication and the events responsible for the globalization of mass media. It offers an introduction to the theories and practices of globalized media, with particular emphasis on the rise of digital media.

COMM 103 | MEDIA, CULTURE AND SOCIETY (3-0-3)

Prerequisite: COMM 101 or GAME 101, **Corequisite:** ENGL 102 or MEST 302 | S, SI

This course offers more in-depth examination of topics addressed in COMM 101, Introduction to Global Media. It adopts a critical approach while examining the relationship between the media and the larger society, encompassing related cultural and political issues. It provides knowledge and understanding of the dominant theories and current research in media effects.

COMM 104 | INTRODUCTION TO NON FICTION TV FORMATS (1-2-2)

Corequisite: ENGL 101 | S

The course will examine the major formats and non-fiction TV shows that have been successful internationally and on Arab TV channels in the last ten years. It will cover all the basic genres of non-scripted TV including reality, game and talent shows.

COMM 105 | INTRODUCTION TO SCRIPTED AND NON-SCRIPTED TV FORMATS (1-2-2)

Corequisite: ENGL 101 | F, S

This course explores scripted and non-scripted TV formats, focusing on storytelling and production in drama, reality, and talent shows. Students analyze global and regional trends, examining structure and success in international and Arab media. Through analytical and creative approaches, they gain essential insights into these formats and their role in contemporary television.

COMM 106 | THE LANGUAGE OF FILM (2-2-3)

Corequisite: ENGL 102 | S

This course explores the fundamentals of film language, including narration, genre, cinematography, mise en scène, editing, sound, and acting. Students evaluate and interrogate the history of global cinema, examining diverse traditions and cultural influences. Through lectures, screenings, readings, and hands-on assignments, students master key film terminology, improve their ability to critically analyze cinematic form, and connect film theory with creative practice, refining their insight into cinematic storytelling and aesthetics.

COMM 201 | MEDIA ECONOMICS AND RESEARCH (3-0-3)

Prerequisites: ENGL 102, MATH 101/ 200 | F

Students will gain a basic understanding of media economics, including for profit media owned by private companies/individuals and nonprofit government owned or subsidized media. They will learn the basic research methods and statistical tools used to measure readers/viewers. Students will also learn how to assess the influences of the economic model on decision-making for news, entertainment and other media industries.

COMM 202 | ETHICAL AND LEGAL RESPONSIBILITIES IN THE MASS MEDIA (3-0-3)

Prerequisite: COMM 103 | S

Using a case study approach, this course provides students with an understanding of the traditions of media-related law that might be used as paradigms in countries with evolving media systems. It explores the ethical duties that accompany journalism, entertainment, advertising, and public relations.

COMM 221 | MEDIA WRITING SKILLS (3-0-3)

Prerequisite: ENGL 102 | F

This course introduces the basics of writing techniques for print, broadcast, and online media. The print section will focus on sharpening students' writing, reporting, news judgment and critical thinking. The broadcast and online sections will focus on writing in a clear, concise and conversational style for television, radio and film, and the evolving principles of writing, editing and presentation for the Web. The course also covers journalistic ethics and professional standards related to writing.

COMM 222 | MULTIPLATFORM STORYTELLING (2-2-3)

Prerequisite: COMM 221, COMM 243 (for JOUR students), or COMM 241 (for DPST students), or VCDM 221 and VCDM 222 (for VC students) | S

Different media require different storytelling skills. Continuing the themes of COMM 221, this course provides training in writing for multiple media platforms, ranging from ink on paper to multimedia venues. The course also emphasizes new media technologies.

COMM 223 | SCREENWRITING FUNDAMENTALS (2-2-3)

Prerequisite: ENGL 102 | F

This course allows students to explore the fundamental elements of screenwriting through writing exercises, writing short scripts, and discussing students' work and the work of fellow screenwriters. In the process, students begin to find their own voices as writers and discover what stories they want to tell.

COMM 230 | VIDEO EDITING AND SOUND DESIGN (2-2-3)

Prerequisites: COMM 106 or GAME 120

Corequisite: COMM 223 or VCCC 205 | F, S

The course gives a comprehensive introduction into the aesthetics of motion picture editing and sound design through hands-on application of recording and editing rules, techniques and practices. Students learn how timing, pacing, sound, and other dramatic aesthetics affect viewer's perceptions and the success of the sequence.

COMM 232 | CINEMATOGRAPHY (0-6-3)

Prerequisites: COMM 230 | S

The course aims to develop a discerning eye for the qualities of the moving image and the skillset required to create moving images that express the intent of the storyteller. It reinforces a fundamental understanding of composition as a storytelling act, rather than simply an aesthetic choice. It then combines that with lighting to build character and create mood.

COMM 241 | INTRODUCTION TO PRODUCTION (2-2-3)

Prerequisites: COMM 223, COMM 230 (for DPST students), or COMM 243 (for JOUR students), or VCDM 221 and VCDM 222 (for VC students) | S

This course introduces the most important aspect of narrative filmmaking – the roles of the actor and the director in forming the story through developing an understanding of character. Students will explore the use of blocking, subtext, story refinement and acting/performance. Students will also gain an understanding of the roles and responsibilities of each crew position on a large scale production by working as crew members on advanced projects.

COMM 243 | INTRODUCTION TO PRODUCTION FOR JOURNALISM (2-2-3)

Prerequisites: COMM 104 | F, SI

The course allows the students to have their initial experience with production and post-production equipment by teaching them the fundamentals of camera composition and lighting as a storytelling act and giving them a comprehensive introduction into the aesthetics of non-linear motion picture editing and sound design. Through hands-on application of cinematography, sound recording and video editing techniques, students will learn how timing, pacing, sound, and other dramatic aesthetics affect viewers' perceptions and the success of the sequence.

COMP 101 | IT AND INNOVATION IN TODAY'S WORLD (3-0-3)

F, S, SI, SII

This course introduces students to information technology (IT) and the associated computer skills of web design, Python programming, and how to use artificial intelligence applications. Students explore established and emerging technologies such as cloud computing, big data, the "Internet of Things," virtual and augmented reality, machine learning, artificial intelligence, and hardware innovations to understand how these technologies work and how they contribute to a variety of social innovations.

DDFT 268 | COMPUTER-AIDED DESIGN (CAD) (1-4-3)

Prerequisites: ARCH 101 or IDES 192, ENGL 101 | F, SI, and Upon demand

In this course, students are introduced to the fundamentals of CAD and the tools used in this form of practice. Students learn 2D and 3D CAD vocabulary and the technical skills necessary to produce floor plans, furniture plans, exterior and interior elevations, building sections, and reflected ceiling plan. Students are also required to set up custom CAD standards and make use of CAD automation tools. A basic CAD 3D modeling component is also introduced at the end of the semester.

DDFT 270 | DIGITAL DESIGN ILLUSTRATION (1-4-3)

Prerequisites: DDFT 268 | S, and Upon demand

The subject focus for this course is the language of architectural exterior and interior design illustrations. Emphasis is on the tools necessary to create skillful enhancement of CAD drawings and turn them into digitally manipulated images which include entourage. Students are required to draft 2D floor plans, elevations, sections and 3D mass model an existing building for the sole purpose of generating accurate shadows. These are then used as backgrounds for applying specific drawing type rendering techniques. The importance of appropriate color, texture, scale, tone, light and typography is stressed in the various stages of production. The end product is a combination of rendered images and text thoughtfully laid out to represent and communicate an idea.

DDFT 341 | DIGITAL DESIGN AND FABRICATION (1-4-3)

Prerequisite: ARCH 102 or IDES 292 | F, and Upon demand

This course provides both the conceptual framework and the practical skills for understanding digital design media and for making effective use of the emerging digital design and fabrication repertoire. Topics include basics of computation, uses of spatial and image data, fundamentals of geometric modeling and fabrication, and cultural aspects of design computing.

DDFT 342 | ADVANCED DIGITAL DESIGN AND FABRICATION (1-4-3)

Prerequisite: DDFT 341 | Upon demand

The Course explores advanced techniques in modeling to help students better understand Rhinoceros' modeling tools, advanced surfacing commands, curves and surface topology and how to apply these concepts in the practical situations.

DDFT 351 | PARAMETRIC DESIGN (1-4-3)

Prerequisite: DDFT 341 | S and Upon demand

This course provides both the conceptual framework and the practical skills for understanding computational design and teaching students the basic skills in visual scripting. Topics include basics computation, uses of spatial and image data, fundamentals of geometric modeling and fabrication, and cultural aspects of design computing.

DDFT 352 | ADVANCED PARAMETRIC DESIGN (1-4-3)

Prerequisite: DDFT 351 | F, and Upon demand

This course brings students into complex concepts of object oriented programming, building upon skills learned in DDFT351. Topics include transformations, physics and structures, evolutionary computation, management and visualization of data flows, scripting for prototyping and digital fabrication, and grasshopper interoperability.

DDFT 372 | VIRTUAL ART (1-4-3)

Prerequisite: ARCH 101 or IDES 191 or VCCC 102 or Portfolio | Upon demand

In this course, students will be introduced to immersive techniques that allow them to create three-dimensional virtual art inside Virtual Reality.

DDFT 373 | VIRTUAL DESIGNS (I-4-3)

Prerequisite: ARCH 101 or IDES 191 or VCCC 102 or Portfolio | Upon demand

In this course, students will acquire experiential-based immersive techniques that allow them to generate and communicate product and industrial designs inside Virtual Reality.

DDFT 374 | VIRTUAL ENVIRONMENTS (I-4-3)

Prerequisite: ARCH 101 or IDES 191 or VCCC 102 or Portfolio | Upon demand

This advanced course introduces students to the principles of Virtual Reality modeling methods. Students will acquire passive and active learning techniques that allow them to 3D design while they are in Virtual Reality.

DDFT 433 | DESIGN PROCESS: CAD AND CAM (I-4-3)

Prerequisite: DDFT 268 | F, and Upon demand

This course provides both the conceptual framework and the practical skills for understanding tools for product development that combines industrial and mechanical design, collaboration, and machining in a single software. Students explore design ideas with an integrated concept-to-production platform, as well as develop an application-based understanding established on the design process to be applied to interior design spaces.

DDFT 442 | ARTIFICIAL INTELLIGENCE IN ARCHITECTURE (I-4-3)

Prerequisite: DDFT 351 | F, and Upon demand

The course introduces artificial intelligence (AI) for architects, providing students with the knowledge and skills necessary to apply AI in their designs. Additionally, the course explores the ethical considerations of AI in architecture and the impact of AI on the built environment.

DDFT 466 | ADVANCED COMPUTER-AIDED DESIGN (I-4-3)

Prerequisite: DDFT 268 | F, S, and Upon demand

This is an advanced computer aided drafting course focused on three-dimensional modeling and animation. Students learn how to translate two-dimensional plans and elevations into three-dimensional drawings to investigate, analyze, develop and improve design solutions and to create design presentations. This is a project-oriented course and each student will apply these simulation techniques to investigate and refine a previously designed hospitality or other approved project. Students are required to generate fully rendered photorealistic perspectives.

DDFT 474 | INTRODUCTION TO BUILDING INFORMATION MODELING (BIM) (I-4-3)

Prerequisite: DDFT 268 or DDFT 341 | F, S, and Upon demand

In this course, students are introduced to the principles and practice form of Building Information Modeling (BIM). Students learn about BIM's bi-directional associativity and embedded relationships. They realize BIM integrates and streamlines coordination between architecture, interior design, structure, MEP, construction, and operations for the entire lifecycle of a building. They digitally build the architecture of a landmark project and learn to extract 2D, 3D, 4D, and 5D BIM by-products. Students also produce a 1:1 scale virtual reality immersive experience out of their BIM semester project.

DDFT 475 | COLLABORATIVE BUILDING INFORMATION MODELING (BIM) (I-4-3)

Prerequisite: DDFT 474 | S, SI, and Upon demand

In this course, students build on the principles and application essentials learned in DDFT 474. Students are required to focus on advanced custom architectural and furniture modeling as well as integrate the architecture and the interior design with the structural and the MEP systems. Advanced BIM application tools are introduced for students to exercise project collaboration and interference checking on all integrated building components.

DDFT 476 | ADVANCED BUILDING INFORMATION MODELING (BIM) (I-4-3)

Prerequisite: DDFT 475 | Upon demand

Advanced Building Information Modeling (BIM) is an advanced course that prepares students for the Autodesk Certified Professional exam: Revit for Architectural Design. It requires mastery of Revit architecture skills as well as the ability to apply solutions to complex workflow and design challenges.

DPST 209 | SELECTED TOPICS IN DIGITAL PRODUCTION AND STORYTELLING (2-2-3)

Prerequisite: approval of the Dean | Upon demand

The course aims at presenting various topics in Digital Production and Storytelling that are of interest to the students and the instructor. The course intends to widen and deepen the students' understanding of various issues related to the broadcast industry.

DPST 302 | MEDIA AND PUBLIC SERVICE (3-0-3)

Prerequisites: COMM 241 or COMM 222 | S

This course explores the role of media in promoting health, education, public safety, and issues of public concern. A case study approach will involve students in research and planning media campaigns in these fields.

DPST 323 | SCREENWRITING AND PRODUCING TV SERIES (2-2-3)

Prerequisite: DPST 340 | S

This course introduces students to a writers' room environment, where they create a show bible and a pilot script for an original TV series. Through teamwork, they participate in pre-production, production, and post-production, gaining hands-on experience in the creative and technical aspects of producing a TV pilot.

DPST 340 | INTERMEDIATE PRODUCTION (1-4-3)

Prerequisite: COMM 241, COMM 232 (for DPST students), or COMM 243 (for JOUR students), or VCDM 221 and VCDM 222 (for VC students) | F

This course expands the student's practical experience in production, enhances their understanding of the set protocol, and helps them develop their storytelling skills. In groups, students produce a short fiction film, a free form video production and an EFP (Electronic Field Production) multi-camera short program. By rotating different crew positions, students get to participate in producing, directing actors, cinematography, sound recording and editing and studio management.

DPST 361 | ONLINE COMMUNITIES (2-2-3)

Prerequisite: ENGL 103, COMM 103 | F

This course examines the establishment, workings, and effects of online communities. It explores the development of Web 1.0 to Web 2.0 along with virtual communities. The students will scrutinize such online tools as blogs, social networks, business networking, virtual worlds, and other online communities.

DPST 422 | CAPSTONE STORYTELLING (2-2-3)

Prerequisite: DPST 323 | F

The purpose of this course is to expand students' development in the narrative conventions of advanced screenwriting including theme, plot, structure and characters. The course, will expose the students to the language of cinematic screenwriting and three-act screenplay structure for the short film made for television, which they can employ in other audiovisual media platforms.

DPST 441/JOUR 441 | THE DOCUMENTARY (2-2-3)

Prerequisite: DPST 340 (for DPST students), JOUR 322 (for JOUR students) | F

This course provides an overview of the history, theory, and genres of documentary films. Students learn to analyze and critique a variety of historical and contemporary documentaries, while developing and producing short documentaries through team work.

DPST 444 | CAPSTONE PRODUCTION (2-2-3)

Prerequisite: DPST 422 | S

The short fiction scripts that had been written in DPST 422 are produced in this course. In groups, students will put their cumulative experience in preproduction, production, and post-production to produce a well-crafted short film at an advanced level.

DPST 461 | INTERNSHIP (0-15-3)

Prerequisite: Senior Status | S, and Upon demand

A carefully supervised internship with a media organization approved by the faculty supervisor. Students are required to submit a detailed ongoing journal and a final report as defined by the faculty supervisor.

ECON 201 | PRINCIPLES OF MICROECONOMICS (3-0-3)

Prerequisite: MATH 200 or MATH 201 | F, S, SI, SII

Economic theory of the firm; resource allocation and price determination; the free market supply/demand mechanism; and pure and imperfect competition models are analyzed. Students must receive at least a **C grade** in this course in order to register for additional Economics Major courses.

ECON 202 | PRINCIPLES OF MACROECONOMICS (3-0-3)

Prerequisite: *ECON 201 | F, S, SI, SII*

Factors determining aggregate economic performance; employment, output, income, price level, economic growth and fluctuations, monetary and fiscal governmental policy; and evolution of economic doctrines are studied. Students must receive at least a C grade in this course in order to register for additional Economics Major courses.

ECON 302 | MONEY AND BANKING (3-0-3)

Prerequisites: *completion of ECON 201 with a grade of C or higher, ECON 202 | F, S*

This course covers the nature of monetary and banking theory; banking history; measurement factors used in determining economic activity; interrelationship of commercial banking system and foreign exchange transactions; balance of international payments; and financial intermediaries. In this course, we will learn about the determinants and impact of interest rates, the stock market, central and commercial banks operation and international financial architecture.

ECON 310 | HISTORY OF ECONOMIC THOUGHT (3-0-3)

Prerequisites: *completion of ECON 201 with a grade of C or higher, ECON 202 | F, SI*

Students completing this course will have obtained in depth knowledge of the history of economic thought, and its relationship to the rise of capitalism as a social, and increasingly global system. It is of important that students majoring in economics understand the historical context in which it has developed. Such knowledge allows students to better grasp complex economic phenomena such as the organization of capital markets, as well as the production and distribution of wealth, from both a historical and contemporary perspective.

ECON 311 | MANAGERIAL ECONOMICS (3-0-3)

Prerequisites: *completion of ECON 201 with a grade of C or higher, ECON 202 | S, SI*

This course is an advanced analysis of rational economic decision-making in a managerial context. Topics include demand estimation, project analysis, business and economic forecasting, market structure and competition.

ECON 312 | INTERMEDIATE MICROECONOMICS (3-0-3)

Prerequisites: *completion of ECON 201 with a grade of C or higher, ECON 202 | F, S*

This course provides students with a more advanced treatment of the topics covered in principles of microeconomics. Particular emphasis is placed on resource allocation and price determination, as determined by consumers' and firms' behaviors. The course explores in detail the concepts of equilibrium and non-competitive markets. It also includes an introduction to game theory, and an advanced treatment of welfare economics, beyond that covered in principles courses.

ECON 313 | INTERMEDIATE MACROECONOMICS (3-0-3)

Prerequisites: *completion of ECON 201 with a grade of C or higher, ECON 202 | F, S*

Macroeconomics is the study of aggregate economic variables such as total production, the general price level, overall employment, total investment and savings, etc. in a specific country. The task of macroeconomists is to understand the fundamental relationships between these variables in order to make better predictions about the economy and advice on public policy. In this course, we will learn about macroeconomic variables and institutions, and use standard macroeconomic models in an attempt to understand why economies experience recessions and booms and what policy options governments might use to avoid decrease (or promote increases) in the standards of living.

ECON 401 | INDUSTRIAL ORGANIZATION (3-0-3)

Prerequisite: *grade of C or higher in ECON 201 | S*

The course begins with an examination of basic theoretical models of the behavior of firms under different market structures such as perfect competition, oligopoly and monopoly. The focus then shifts to the applications of economics in antitrust cases. Industry cases and applications of antitrust policies are studied with an emphasis on the structure-conduct-performance approach to industrial organization.

ECON 402 | INTERNATIONAL ECONOMICS (3-0-3)

Prerequisites: *a grade of C or higher in ECON 202; completion of FINA 201 | S*

This advanced elective course considers the current theories and the practical consequences of international trade. A variety of forms of commercial policy as a means of regulating trade are examined. Internal financial flows and exchange rate mechanisms are also considered. The domestic consequences for organizations of exchange rate policy are examined.

ECON 441 | PUBLIC FINANCE (3-0-3)

Prerequisites: *grade of C or higher in ECON 201, ECON 202 | F*

The focus of this course is on the economics of the public sector. Topics covered include the government budget and its impact on resource allocation, income distribution and economic stabilization; the government budgeting process and the principles and problems of budget determination, including both tax and expenditure aspects; tax shifting and incidence; and fiscal and debt management policies.

ECON 442 | OIL AND ENERGY ECONOMICS (3-0-3)

Prerequisites: *ECON 312, ECON 313 | S*

The course provides students with an overview of the economics of energy markets, as well as the determinants of recent and historical price trends in the industry. Students are provided with an introduction into energy trading, and how such trading is influenced by economic and political events.

ECON 460 | APPLIED ECONOMETRICS (3-0-3)

Prerequisites: *ECON 312, QUAN 301 | F, S*

Econometrics is the application of statistical methods for the purpose of testing economic and business theories. Economic analysis and forecasting require a solid understanding of the principles of econometrics. This course will introduce students to the skills used in empirical research including, but not limited to, data collection, hypothesis testing, model specification, regression analysis, violations of regression assumptions and corrections, dummy variables and limited dependent variable models. Extensive focus will be on the intuition and application of econometric methods. This course is a more practical approach to econometrics. We will focus on using theory and software to application of econometrics to every-day problems. More importantly we'll cover the practical issues of choosing a research topic, obtaining data and conducting analysis.

ECON 491 | SPECIAL TOPICS IN ECONOMICS (3-0-3)

Prerequisite: *Senior Status or approval of the Chair, grade of C or higher in ECON 201 |*

Upon demand

This course represents a critical study into the theory, research and practical applications of an advanced topic in economic, one that is not covered in other economics courses. The specific topics will be determined by the interest of students and the instructor.

ECVL 210 | ENGINEERED MATERIALS W/LAB (3-3-4)

Prerequisites: *CHEM 201, ENGG 270 | F, S*

Physico-chemical properties of construction materials. Atomic structure and phase diagrams. Corrosion and chemical degradation. Material hardness, durability, fracture, ductility, and strengthening mechanisms. Engineering shop experience.

ECVL 268 | MECHANICS OF MATERIALS (3-0-3)

Prerequisite: *ENGG 270 | F, S*

Analysis of stresses and strains in two and three dimensions. Stress transformation and Mohr's circle. Torsion of circular sections, bending of beams, combined loading, shear flow, and buckling of axially loaded members.

ECVL 305 | GEOMATICS W/LAB (3-2-3)

Prerequisites: *ENGG 200, ENGG 210, ENGG 222 | F*

Geospatial data collection methods and equipment including total stations, GPS, LiDAR, and photogrammetry. Applications in GIS, geometric design, earthwork, and staking of roadways and railways. Hands-on field work and current design software.

ECVL 330 | FLUID MECHANICS W/LAB (3-2-3)

Prerequisites: *ENGG 270 | F, S*

Mechanics of fluids with emphasis on control volume analysis of flowing fluids using kinematics, continuity, energy, and momentum principles. Introduction to open channel flow and applications to real fluids.

ECVL 340 | ENVIRONMENTAL ENGINEERING W/LAB (3-2-3)

Prerequisites: *BIOL 201, CHEM 201 | S*

Environmental engineering issues associated with water, air, and land pollution. Risk assessment, groundwater contamination, environmental chemistry, global climate change, and sustainable technologies.

ECVL 350 | TRANSPORTATION ENGINEERING W/LAB (3-2-3)

Prerequisite: ECVL 305 | S

Introduction to the planning, design, operation, and evaluation of transportation systems. Human, vehicular, and roadway characteristics. Traffic flow, bottleneck, and queuing models. Structural characteristics and loading conditions of pavements. Hands-on lab work and current transportation software.

ECVL 360 | STRUCTURAL ANALYSIS I W/LAB (3-3-4)

Prerequisites: ECVL 268, MATH 230 | F

Loads and structural systems. Internal forces in statically determinate structures. Deflection of statically determinate structures using various methods. Analysis of statically indeterminate structures by the compatibility method. Moment distribution for beams and frames. Analysis using commercial software.

ECVL 368 | REINFORCED CONCRETE DESIGN I (3-0-3)

Prerequisites: ECVL 210, ECVL 360, ENGG 255 | S

Methodologies and codes for design of reinforced concrete elements. Design of members for flexure, shear, and bond development. Detailing of continuous beams, one-way slabs, short columns, and footings. Design project.

ECVL 370 | GEOTECHNICAL ENGINEERING I W/LAB (3-3-4)

Prerequisites: ECVL 210, ECVL 330, MATH 240 | S

Introduction to engineering classification, mechanical behavior, and compaction of soils. Effective stresses and seepage. Spatial stress distribution and consolidation. Introduction to shear strength, and site exploration. Analysis and remediation of slope instability.

ECVL 380-389 | LABORATORY TOPICS IN CIVIL ENGINEERING (0-3-1)

Prerequisite: approval of the Dean | Upon demand

Laboratory topics of interest to students and faculty which are not available in the existing Civil Engineering curriculum can be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

ECVL 399 | FIELD EXPERIENCE IN CIVIL ENGINEERING (1-25-2)

Prerequisites: ECVL 350, ECVL 360, ECVL 370, PSPK 101 | SI

Practical field experience, involving work on real civil engineering projects. Technical work under the supervision of a civil engineer, with emphasis on design and construction. Development and implementation of teamwork and project management skills. Professional and ethical issues in the engineering workplace.

ECVL 420 | CONSTRUCTION ENGINEERING AND MANAGEMENT (3-0-3)

Prerequisite: ECVL 368 or ECVL 370 | F

Fundamental concepts in planning, design, and construction of civil engineering projects. Covering topics of project delivery systems, sustainability in construction, contracts, cost estimating, project scheduling, scheduling software, cash flow analysis and project controls.

ECVL 421 | BIM IN ENGINEERING AND CONSTRUCTION (3-0-3)

Prerequisite: ENGG 210, ECVL 420 | S

The course introduces Building Information Modeling (BIM) in engineering and construction through the application of Autodesk's Revit software. Students will develop fully functional Revit building models, assess constructability problems, perform energy modeling, produce takeoff schedules, and use model output to address a project's environmental and economic constraints.

ECVL 422 | CONSTRUCTION OPERATIONS AND PROCESSES (3-0-3)

Prerequisite: ECVL 420 | S

Site layout and integrated operations design for common civil infrastructure and construction works such as excavation, reinforced concrete, structural steel, and finishing works. Selection of equipment, fleet design, resource allocation, productivity analysis, concrete formwork design, and construction safety considerations.

ECVL 433 | HYDRAULIC ENGINEERING (3-0-3)

Prerequisite: ECVL 330, ENGG 222 | S

Estimation of urban water demand and Needed Fire Flow. Analysis and design of water transmission and distribution systems, pump stations, storage tanks, open channels, and hydraulic structures using current software. Applications of environmental hydraulics, infrastructure regulations, and smart water management systems.

ECVL 440 | SUSTAINABLE ENGINEERING DESIGN (3-0-3)

Prerequisite: ECVL 340 | F

Implications of sustainability for engineering design and practice. LEED, life cycle analysis, and environmental impact assessment. Models, software tools, and applications in water management, construction material selection, and energy use.

ECVL 444 | WATER AND WASTEWATER ENGINEERING (3-0-3)

Prerequisites: ECVL 330, ECVL 340 | F

Unit operations in water, wastewater, and groundwater treatment. Design of water and wastewater treatment operations and processes using bench-scale experiments and software. Preliminary cost estimates. Design project.

ECVL 452 | PAVEMENT AND RAILWAY ENGINEERING (3-0-3)

Prerequisites: ECVL 350, ECVL 370 | S

Methods of analysis and design of flexible and rigid pavements for highways and airfields. Analysis and design of railway structures. Sustainable technologies and materials for pavements. Maintenance, rehabilitation, and reconstruction of pavements and railway structures.

ECVL 455 | TRAFFIC ENGINEERING (3-0-3)

Prerequisite: ECVL 350 | F

Introduction to operations, safety, and evaluation of traffic systems. Traffic data collection and analysis, traffic flow fundamentals, shockwave analysis, intersection design, and intelligent transportation systems. Hands-on application of current traffic software.

ECVL 458 | TRANSPORTATION PLANNING (3-0-3)

Prerequisite: ECVL 350 | S (even years)

Transportation planning procedures and processes. Traffic forecast models, trip generation, trip distribution, modal split, route assignment and corresponding effects of intelligent transportation systems. Traffic impact studies, development and evaluation of transportation plans, and application of planning software.

ECVL 460 | STRUCTURAL ANALYSIS II (3-0-3)

Prerequisite: ECVL 360 | S (even years)

Analysis of structures using matrix methods. Flexibility and stiffness techniques. Influence lines, moving loads, and approximate methods of analysis. Introduction to the finite element method.

ECVL 466 | STRUCTURAL STEEL DESIGN (3-0-3)

Prerequisites: ECVL 210, ECVL 360 | F

Behavior of structural steel in tension and compression. Design methods for tension and compression members and beams. Design and analysis of welded and bolted connections. Design project.

ECVL 468 | REINFORCED CONCRETE DESIGN II (3-0-3)

Prerequisite: ECVL 368 | F (odd years)

Methodologies and codes for design of advanced reinforced concrete elements. Detailing design of two-way slabs, continuous two-way slabs, uniaxial columns, biaxial columns, and footings. Design project.

ECVL 471 | GEOENVIRONMENTAL ENGINEERING (3-0-3)

Prerequisite: ECVL 340, ECVL 370 | F (odd years)

A design-based course where geotechnical and hydrogeologic principles are applied to study environmentally sustainable disposal of solid waste. Topics studied include: source and nature of waste, disposal options, environmental legislation and regulations, contaminant transport, landfill design considerations, use of natural and geosynthetic materials in landfill, and design issues and tradeoffs.

ECVL 470 | GEOTECHNICAL ENGINEERING II (3-0-3)

Prerequisite: ECVL 370 | F

Site investigation and evaluation. Study of lateral earth pressure and soil bearing capacity. Design and analysis of geotechnical structures, including shallow and deep foundations, and earth retaining structures. Design project using current software.

ECVL 480-489 | SPECIAL TOPICS IN CIVIL ENGINEERING (3-0-3)

Prerequisite: *approval of the Dean | Upon demand*

Topics of interest to students and faculty which are not available in the existing Civil Engineering curriculum can be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

ECVL 499 | CIVIL ENGINEERING DESIGN PROJECT (3-3-4)

Prerequisite: *ECVL 399, Corequisites: ECVL 420, ECVL 470 | F, S*

Interdisciplinary course covering a broad range of civil engineering topics. Integrated team design project involving structural and geotechnical design, transportation planning, environmental assessment, construction management, cost estimates, plans and specifications.

EECE 200 | LINEAR CIRCUIT ANALYSIS I W/LAB (3-3-4)

Prerequisite: *PHYS 202 with a grade of C or higher, Corequisite: MATH 231 (students will not receive credit for both EECE 200 and EECE 201) | F, S*

Physical principles underlying circuit model elements. Basic circuit elements, resistance, inductance, and capacitance. Independent and controlled sources and OpAmps. Analysis of steady-state and transient responses. First and second-order circuits.

EECE 201 | ELECTRIC CIRCUIT THEORY (3-0-3)

Prerequisites: *MATH 231, PHYS 202 (students will not receive credit for both EECE 200 and EECE 201) | F, S*

Fundamentals of electric circuit theory for first- and second-order linear circuits. Conceptual and working understanding of basic circuit elements, resistance, inductance, and capacitance. Independent and controlled power sources and operational amplifiers. Introduction to analysis of steady-state and transient responses of first-order circuits.

EECE 205 | LINEAR CIRCUIT ANALYSIS II W/LAB (3-3-4)

Prerequisites: *EECE 200, MATH 231 | S, SI*

Analysis of sinusoidal steady-state systems. Frequency response and Bode plots. Circuit analysis using mathematical transforms, convolution integrals, state variable methods, and transfer functions. Simulation software applications.

EECE 240 | DIGITAL SYSTEM DESIGN W/LAB (3-3-4)

Prerequisites: *EECE 200 | S, SI*

Introduction to digital logic design. Boolean algebra and switching theory, logic minimization and K-maps, combinational design, programmable logic, state elements, synchronous sequential design, and basic memory structure.

EECE 250 | INTERMEDIATE PROGRAMMING (3-0-3)

Prerequisite: *ENGG 140 | F, S*

Object-oriented programming for advanced problem solving. Abstract classes, inheritance, and polymorphism. Advanced flow control instructions, abstract data types, I/O streams, and memory management. Elementary data structures.

EECE 300 | MICROELECTRONIC DEVICES AND CIRCUITS I, W/LAB (3-2-3)

Prerequisites: *CHEM 201, EECE 205 | F*

Conceptual and functional description of the characteristics of microelectronic devices, semiconductors, PN junctions, diode circuits, BJT and FET's. Load-line analysis, biasing and Small-signal analysis, digital logic circuits. Design Project.

EECE 305 | MICROELECTRONIC DEVICES AND CIRCUITS II (3-0-3)

Prerequisite: *EECE 300 | S*

Analysis and design of electronic circuits and systems. Single-stage and multistage amplifiers, frequency response, feedback amplifiers, power amplifiers, oscillators, memory and data converter circuits. Advanced digital technologies.

EECE 310 | APPLIED ELECTROMAGNETICS I (3-0-3)

Prerequisites: *EECE 205, MATH 240 | F*

Vector analysis. Coulomb's law and the static electric field. Electric flux and Gauss' law. Electrostatic work, energy, and potential. Capacitance and dielectric materials. Current and conductors. Laplace's equation. Ampere's law and the static magnetic field. Magnetic materials and properties. Faraday's law and induction.

EECE 315 | APPLIED ELECTROMAGNETICS II W/LAB (3-2-3)

Prerequisites: EECE 310, ENGG 255 | S

Time-varying fields and Maxwell's equations. Electromagnetic waves and propagation. Reflection and transmission of plane waves. Theory and applications of transmission lines. The Smith chart. Impedance matching and transmission line circuits. Introduction to waveguides.

EECE 320 | SIGNALS AND SYSTEMS W/LAB (3-2-3)

Prerequisites: EECE 205, ENGG 222 | F

Signals and systems. Linear-time invariant systems. Fourier series representation of periodic signals. The continuous-time Fourier transform. The discrete-time Fourier transform. Convolution integral and convolution sum. Practical applications of Fourier transforms in both time and frequency domains for characterization of signals and systems.

EECE 323 | FUNDAMENTALS OF DIGITAL SIGNAL PROCESSING (3-0-3)

Prerequisite: EECE 320 | S

Discrete-time signals and systems. The z-transform. Sampling of continuous-time signals. Transform analysis of linear time-invariant systems. Structures for discrete-time systems. Fourier transforms: DTFT and DFT. Implementation of the FFT. Digital filter design.

EECE 326 | COMMUNICATION SYSTEMS I W/LAB (3-2-3)

Prerequisites: EECE 320, ENGG 300 | S

Classification of communication signals and concept of signal space. Signal transmission through LTI Channels. Linear and non-linear distortion of signals. Modulation and demodulation techniques for analog communication: DSB-SC, AM, SSB, QAM, FM, and PM. Frequency and time-division multiplexing. Random processes and spectral analysis. Introduction to digital communication.

EECE 330 | ELECTRIC POWER SYSTEMS W/LAB (3-2-3)

Prerequisites: EECE 205, ENGG 222 | S

Balanced three phase real and reactive power. Power factor and power factor correction. System model and per unit analysis. Transmission line parameters and performance. Power flow and usage for system planning and design.

EECE 340 | INTRODUCTION TO MICROPROCESSORS W/LAB (3-2-3)

Prerequisites: EECE 240, EECE 250 | F, S

Introduction to architecture, operation, and application of microprocessors. Assembly programming language, address decoding, and system timing. Parallel, serial, and analog I/O, interrupts and direct memory access. Interfacing to static and dynamic RAM.

EECE 345 | COMPUTER ARCHITECTURE W/LAB (3-2-3)

Prerequisite: EECE 340 | S

Instruction set architecture (ISA) design and analysis. High-level languages, compilers, and ISA interaction. Simple and pipelined datapath/control path processor design. Memory hierarchy and caches. Performance evaluation and analysis.

EECE 350 | DATA STRUCTURES AND ALGORITHMS (3-0-3)

Prerequisites: EECE 250, MATH 250 | F

Abstract data types and data representation in static and dynamic collections: queues, sets, lists, trees and graphs. Storage allocation and collection techniques. Basic algorithms for manipulation and characterization of stored data. Performance characterization and evaluation.

EECE 355 | SOFTWARE ENGINEERING (3-0-3)

Prerequisite: EECE 250, ENGG 255

EECE 250, GMAE 210 (for Game Studies students) | F, S

Modern software engineering methods and principles that enable development of quality software. Use of UML to model computer software components, pathways, and processes. Overview and analysis of the software life cycle from planning to production.

EECE 360 | COMPUTER NETWORKS (3-0-3)

Prerequisite: *ENGG 200 or ENGG 300 | S*

OSI model and its instantiation in TCP/IP, with emphasis on the value of standards. Overview of the seven layers, focusing on Transport, Network, and Physical layers. Routing and switching, IP addressing, and wired and wireless Ethernet.

EECE 380-389 | LABORATORY TOPICS IN ELECTRICAL AND COMPUTER ENGINEERING (0-3-1)

Prerequisite: *approval of the Dean | Upon demand*

Laboratory topics of interest to students and faculty which are not available in the existing Computer or Electrical Engineering curricula will be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

EECE 398 | FIELD EXPERIENCE IN ELECTRICAL ENGINEERING (1-25-2)

Prerequisites: *EECE 300, EECE 326, EECE 330, PSPK 101 | SI*

Practical field experience, involving work on real electrical engineering projects. Technical work under the supervision of an electrical engineer. Development and implementation of teamwork and project management skills. Professional and ethical issues in the engineering workplace.

EECE 399 | FIELD EXPERIENCE IN COMPUTER ENGINEERING (1-25-2)

Prerequisites: *EECE 340, EECE 350, EECE 360, PSPK 101 | SI*

Practical field experience, involving work on real computer engineering projects. Technical work under the supervision of a computer engineer. Development and implementation of teamwork and project management skills. Professional and ethical issues in the engineering workplace.

EECE 400 | ELECTRIC VEHICLE DESIGN AND AUTOMATION (3-0-3)

Prerequisite: *EECE 300 | S*

Electric and autonomous vehicles. Configurations of hybrid electric vehicle (HEV), plug-in hybrid electric vehicle (PHEV), and battery electric vehicle (BEV). Components of EVs.

EECE 426 | COMMUNICATION SYSTEMS II (3-0-3)

Prerequisite: *EECE 326 | F*

Geometric representation of signals and signal-space analysis. Digital modulation by phase shift keying, quadrature amplitude modulation, frequency shift keying and their individual variants. Spread spectrum modulation. Error correction coding.

EECE 428 | WIRELESS COMMUNICATION (3-0-3)

Prerequisite: *EECE 326 | S*

The cellular network: frequency reuse, co-channel interference, system capacity, and handoff strategies. Large scale path-loss. Small-scale fading and multipath. Equalization, diversity and channel coding. Modulation techniques for wireless communication. Multiple access techniques in wireless networks.

EECE 430 | ENERGY ENGINEERING (3-0-3)

Prerequisite: *EECE 330 | F*

Introduction to electromechanical power conversion and transformers. Synchronous machines, asynchronous (induction) machines, and operating principles of AC and DC machinery. Introduction to alternative and renewable energy with emphasis on solar and wind energy.

EECE 433 | ELECTRIC DRIVES (3-0-3)

Prerequisite: *EECE 330 | S*

Basic AC and DC variable speed motor drives. Variable voltage and variable frequency drives for induction motors, including flux vector control. Fundamentals of power electronics for motor drives. Design of system interface, control, and commissioning.

EECE 434 | SMART GRID ANALYSIS FOR SUSTAINABLE ENERGY (3-0-3)

Prerequisite: *EECE 330 | S*

This course provides an overview of distributed generation systems and smart power grids. The course covers the technical aspects, control, modeling, and load flow analysis of smart grids. The environmental and economic aspects of smart grids and distributed generators are also presented.

EECE 435 | POWER SYSTEM PROTECTION AND RELAYING (3-0-3)

Prerequisite: EECE 330 | F

Electric system fault analysis, current calculation, fault protection, and device selection. Protection of transmission lines and buses, transformers, generators, synchronous machines, and induction motors. Computational methods for design of power systems protection.

EECE 437 | SOLAR ENERGY SYSTEMS (3-0-3)

Prerequisite: EECE 330 | F

Deep analysis of photovoltaic systems and their integration within the electric power network. Characteristics of photovoltaic cells and modules, photovoltaic system components, and design of effective standalone and grid-connected systems.

EECE 440 | EMBEDDED SYSTEM DESIGN W/LAB (3-2-3)

Prerequisite: EECE 340 | F

Microcontroller structure, instruction set, and peripherals. Digital and analog I/O, interrupts, timers and event counters, and serial communication. Efficient microcontroller programming with assembly and C. Real-time kernels and scheduling techniques.

EECE 442 | SYNTHESIS WITH HDL (3-0-3)

Prerequisite: EECE 340 | Upon demand

Fundamental concepts, techniques, and tools for computer-aided design of digital systems. Modeling, simulation, and verification of digital systems using hardware descriptive languages at the register transfer level (RTL).

EECE 448 | DIGITAL INTEGRATED CIRCUIT DESIGN (3-0-3)

Prerequisite: EECE 340 | Upon demand

VLSI design process in CMOS technology. Advanced CMOS transistor modeling. CMOS gates timing and power modeling. Interconnect modeling and analysis techniques. SPICE circuit simulation. Digital chip design and fabrication. Digital memory design.

EECE 450 | OPERATING SYSTEMS (3-2-3)

Prerequisites: EECE 345, EECE 350 | F

Fundamental concepts related to the design of operating systems: process and thread scheduling and synchronization; deadlock prevention; memory management; I/O management; file systems and storage management; and security.

EECE 452 | RELATIONAL DATABASES (3-0-3)

Prerequisites: EECE 350 | Upon demand

Database modeling and implementation. Relational data modeling and modeling tools: entity relationship, table normalization, and schema implementation. Structured Query Language. Storage allocation and management. Embedded database systems.

EECE 453 | INTRODUCTION TO ARTIFICIAL INTELLIGENCE (3-0-3)

Prerequisites: EECE 350 | Upon demand

Concepts and methods of Artificial Intelligence including intelligent agents, planning, learning, reasoning, perception, and game theory. First and second order logic, heuristic search, and symbolic search algorithms. Programming techniques for AI and machine learning. Applications in robotics and search algorithms.

EECE 454 | INTRODUCTION TO MACHINE LEARNING (3-0-3)

Prerequisites: EECE 350, ENGG 300 | Upon demand

The course provides a broad perspective on machine learning approaches and techniques with the focus on solving real-world problems. The course is application-oriented and trains students on the use of modern programming tools to process data and implement useful solutions. The covered topics include supervised learning, unsupervised learning, regression, classification, clustering, dimensionality reduction, and generative methods.

EECE 455 | DIGITAL IMAGE PROCESSING (3-0-3)

Prerequisite: EECE 323 | *Upon demand*

Digital Imaging Fundamentals. Human visual perception and color. 2-D Fourier space, sampling, and reconstruction. Image enhancement in the spatial domain. Image enhancement in the frequency domain. Image restoration. Color image processing.

EECE 457 | MOBILE APPLICATIONS (3-0-3)

Prerequisites: EECE 355, EECE 360 | *F (odd years)*

Introduction to mobile computing including the theory and paradigms of wireless networks and mobile device technology, architecture, and applications. Topics include mobile security, location-based services, synchronization, and development of thin-client applications.

EECE 461 | INTRODUCTION TO INTERNET OF THINGS (3-0-3)

Prerequisite: EECE 360 | *F*

IoT concepts, systems architecture, hardware platforms, relevant wireless technologies and networking protocols, security, privacy and ethical design concepts, device programming and integration.

EECE 470 | SYSTEMS AND CONTROLS (3-0-3)

Prerequisites: EECE 300, EECE 320 | *F*

Mathematical models of systems. State-variable model. Performance and stability of feedback control systems. Root locus method. Frequency response methods. Design of feedback control systems.

EECE 480-489 | SPECIAL TOPICS IN ELECTRICAL AND COMPUTER ENGINEERING (3-0-3)

Prerequisite: *approval of the Dean | Upon demand*

Topics of interest to students and faculty which are not available in the existing Electrical and Computer Engineering curricula will be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

EECE 498 | ELECTRICAL ENGINEERING DESIGN PROJECT (3-3-4)

Prerequisite: EECE 398, **Corequisite:** EECE 470 | *F, S*

Interdisciplinary course covering a broad range of electrical engineering topics. Integrated team design project involving design of a multi-component electrical system within realistic constraints, cost estimates, plans and specifications.

EECE 499 | COMPUTER ENGINEERING DESIGN PROJECT (3-3-4)

Prerequisite: EECE 399, **Corequisites:** EECE 440, EECE 450 | *F, S*

Interdisciplinary course covering a broad range of computer engineering topics. Integrated team design project involving software and hardware design within realistic constraints, cost estimates, plans and specifications.

EMEC 210 | STRUCTURE AND PROPERTIES OF MATERIALS W/LAB (3-3-4)

Prerequisites: CHEM 201, PHYS 202 | *F, S*

Physical properties of solid materials at the macroscopic and microscopic levels. Atomic bonding, crystal structure, chemical bonding, phase transformation, dislocation, and fracture. Engineering properties of metals, alloys, ceramics, polymers, and composite materials. Introduction to nanomaterials. Laboratory experiments.

EMEC 313 | MANUFACTURING TECHNOLOGY (3-0-3)

Prerequisites: EMEC 320 | *S*

Manufacturing processes for metals. Metal cutting, welding, casting, and forming. Rolling, drawing, and extrusion of metals and polymers. Economic evaluations and process selection. contemporary topics in manufacturing such as additive manufacturing and CNC machining.

EMEC 320 | SOLID MECHANICS I (3-0-3)

Prerequisites: EMEC 210, ENGG 275 | *F, S*

Analysis of stresses and strains in two and three dimensions. Principal stresses, maximum shear stress, Mohr circle, and stress transformation. Shear force and bending moment diagrams. Extension, torsional rotation, bending, and buckling of machine elements. Stresses and strains in membranes, pressure vessels, and pipes.

EMEC 330 | FLUID DYNAMICS W/LAB (3-3-4)

Prerequisites: *ENGG 275, MATH 240 | F, S*

Review of fluid statics, barometry, and buoyancy. Dynamics of fluids with emphasis on control volume analysis of flowing fluids using kinematics, continuity, energy, and momentum principles. Local analysis using continuity and Navier-Stokes Equations. Viscous flow analysis, boundary layers, pipe flow, and drag. Dimensional analysis and similitude. Laboratory experiments.

EMEC 340 | THERMODYNAMICS (3-0-3)

Prerequisites: *ENGG 275 | F*

First law of thermodynamics. Thermodynamic properties of pure substances, energy and mass conservation, and entropy. Second Law of thermodynamics, gas and vapor cycles, energy system analysis and power cycles. Principles of heating and refrigeration. Thermodynamics of reacting mixtures.

EMEC 345 | HEAT TRANSFER W/LAB (3-2-3)

Prerequisites: *EMEC 330, EMEC 340 | S*

Analytical and numerical methods for steady-state and transient heat conduction. Empirical and practical relations for forced- and free-convection heat transfer. Introduction to heat exchangers. Radiation heat exchange between black bodies, and between non-black bodies. Solar radiation. Numerical and experimental labs.

EMEC 350 | DESIGN OF MECHANICAL SYSTEMS W/LAB (3-2-3)

Prerequisites: *EMEC 320, ENGG 210, ENGG 255 | S*

Design of machine elements, including springs, fasteners, shafts, and power screws. Design of gear trains. Lubrication and sliding bearings. Roller bearing. Static and fatigue failure. Integration and assembly of machine elements. Laboratory design experience using professional CAD software.

EMEC 361 | INTRODUCTION TO MECHATRONICS W/LAB (3-3-4)

Prerequisites: *EECE201, ENGG200 | F*

Synergetic integration of Mechatronic Systems. Electrohydraulic and electromechanical systems. Sensors, actuators, drive systems and controllers. Controller programming and interfacing. Static and dynamic signals. Signal conditioning, and uncertainty analysis. Instrumentation and measurement techniques. Lab experiments and documentation.

EMEC 365 | CONTROL SYSTEMS W/LAB (3-2-3)

Prerequisites: *EMEC 361, ENGG 222 | S*

Principles of control system dynamics. Open-loop and closed-loop systems. Transfer functions. Block diagrams and equivalent systems. State space representation. Root locus and frequency domain techniques. System stability design using PID elements. Software-based simulation of control systems.

EMEC 380-389 | LABORATORY TOPICS IN MECHANICAL ENGINEERING (0-3-1)

Prerequisite: *approval of the Dean | Upon demand*

Laboratory topics of interest to students and faculty which are not available in the existing Mechanical Engineering curriculum will be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

EMEC 399 | FIELD EXPERIENCE IN MECHANICAL ENGINEERING (1-25-2)

Prerequisites: *EMEC 345, EMEC 350, EMEC 361, PSPK 101 | INT*

Practical field experience, involving work on real mechanical engineering projects. Technical work under the supervision of a mechanical engineer. Development and implementation of teamwork and project management skills. Professional and ethical issues in the engineering workplace.

EMEC 400 | COMPUTER-AIDED MECHANICAL DESIGN (3-0-3)

Prerequisite: *EMEC 350 | F*

Project-based implementation of CAD, CAE, and CAM systems for mechanical production. Geometric modeling, prototyping, and product development using software applications. Limitations on CAD and CAE systems, including economic constraints, safety, sustainability, and manufacturability.

EMEC 416 | COMPUTER-AIDED MANUFACTURING (3-0-3)

Prerequisite: EMEC 313 | F (odd years)

Introduction to CAM. CAD/CAM Integration. CNC Machining Basics. Tool path Generation. Materials and Processes. Quality Control in CAM. Advanced CAM Technologies. CAM in Industry Applications.

EMEC 433 | TURBOMACHINERY (3-0-3)

Prerequisites: EMEC 330, EMEC 340 | S (odd years)

Principles of fluid dynamics and thermodynamics governing the performance and efficiency of combustion, steam, wind, and hydraulic turbomachinery. Rotor-fluid energy exchange, vortex flow, losses in nozzles and diffuser, and blade element performance. Design of centrifugal pumps, axial compressors multistage turbomachinery, and wind turbines.

EMEC 435 | ENGINEERING AERODYNAMICS (3-0-3)

Prerequisite: EMEC 330 | S (even years)

Principles of subsonic aerodynamics, including airfoils, force and moment coefficients, lift, and drag. Kelvin circulation theorem, thin airfoil theory, vortex panel method, and pressure integration. Design of wings, power and thrust, and lifting line theory. Aircraft design, control, stability, and flight takeoff and landing. Safety and reliability implications.

EMEC 436 | HYDRAULIC POWER SYSTEMS (3-0-3)

Prerequisite: EMEC 330 | S (even years)

Hydraulic pumps. Hydraulic actuators including linear and rotary actuators. Control components. Accumulators and safety components. Hydraulic Losses. Hydraulic circuit design and analysis.

EMEC 438 | COMPUTATIONAL FLUID DYNAMICS (3-0-3)

Prerequisites: ENGG 222, EMEC 330 | S (odd years)

Flow of compressible fluids and advanced dynamics of fluids. Numerical and computational modeling of fluid flow and fluid transport. Introduction to finite difference and finite volume method solutions. Software implementation including mesh generation, selection of model parameters, solution techniques, and interpretation of results.

EMEC 440 | ENERGY SYSTEMS (3-0-3)

Prerequisite: EMEC 345 | F (odd years)

Principles of energy conversion. Performance of heat exchangers and efficiency of gas and steam turbines. Thermodynamics of combustion processes in gas, vapor and combined power cycles. Regeneration and cogeneration in thermal power plants. Renewable energy systems. Technical, environmental, economic, and societal aspects of energy generation from fossil fuel, hydro, solar, wind, nuclear, and geothermal systems.

EMEC 444 | DESIGN OF HVAC SYSTEMS (3-0-3)

Prerequisite: EMEC 345 | F (even years)

Design and analysis of vapor-compression and absorption refrigeration systems. Principles of thermal comfort, air conditioning, and dehumidification. Load estimates, delivery losses, air distribution and ventilation control. Environmental regulations and implications of thermal insulation in terms of energy conservation.

EMEC 447 | INTERNAL COMBUSTION ENGINES (3-0-3)

Prerequisite: EMEC 340 | F (odd years)

Operating principles and cycle analysis of ICE systems. Thermo-chemical reactions, air and fuel induction, ignition, and combustion. Emissions, exhaust, and pollution control. Heat transfer, engine dynamics, and energy efficiency. Friction, lubrication, and wear of engine components. Software-based simulations of ICE cycles.

EMEC 452 | MECHANICAL VIBRATIONS (3-0-3)

Prerequisite: EMEC 365 | S (odd years)

Response of undamped and damped SDOF to harmonic forced vibration. Fourier transform, convolution methods, frequency-domain analysis, and applications in random and transient vibration. System resonance, frequency response analysis, and response spectra. Eigenvalues and modes of vibration of multiple DOF systems.

EMEC 466 | DESIGN OF ROBOTIC SYSTEMS (3-0-3)

Prerequisites: EMEC 350, EMEC 365 | S (even years)

Design, modeling, and simulation of robotic and mechatronics systems. Kinematics and differential motion, precision, and payload selection. Mechanical design of actuators, sensors, and robot control. Implications of robotic system deployment in terms of safety, security, ethics, and economy.

EMEC 475 | ADVANCED MECHATRONIC SYSTEMS (3-0-3)

Prerequisites: EMEC 361 | S

Mechatronics System Performance. Motion transmission mechanisms. Computer control systems. Microprocessor and microcontrollers. Z transform. Discrete time systems and controllers. Interfacing Sensors and Actuators to Computer. Real Time Interfacing. Computer I/O Cards and Software. Mechatronics system case studies.

EMEC 480-489 | SPECIAL TOPICS IN MECHANICAL ENGINEERING (3-0-3)

Prerequisite: approval of the Dean | Upon demand

Topics of interest to students and faculty which are not available in the existing Mechanical Engineering curriculum will be offered through this course. Prior approval of the course material and syllabus by the Dean is required.

EMEC 499 | MECHANICAL ENGINEERING DESIGN PROJECT (3-3-4)

Prerequisite: EMEC 313, EMEC 399, EMEC 400 | F, S

Interdisciplinary course covering a broad range of mechanical engineering topics. Integrated team project involving design and prototyping of a mechanical system or product within realistic constraints, including documentation of cost estimates, plans and specifications.

ENGG 140 | INTRODUCTION TO PROGRAMMING (3-2-3)

Prerequisite: MATH 095 (Placement by Computer Proficiency Examination or COMP 101 with a grade of C or higher) | F, S, SI

Language-independent problem solving and computational thinking. Fundamentals of programming in common micro-computing languages. Program structure, procedural statements, input/output and file handling, and basic algorithms including sorting and searching.

ENGG 200 | ENGINEERING STATISTICS (3-0-3)

Prerequisite: MATH 220 | S, SI

Introduction to statistics and probability in engineering. Discrete and continuous distributions, sampling, and inference of mean and variance. Hypothesis testing, design of experiments and statistical quality control of engineering components and systems.

ENGG 210 | ENGINEERING GRAPHICS AND VISUALIZATION (3-0-3)

Prerequisite: ENGG 140 | F, S, SI

Principles of engineering drawing, geometric modeling, multi-view projections, and computer-aided graphics. Three-dimensional representation, geometric perspectives, and solid modeling. Applications in engineering design, including drafting standards, dimensioning, specifications, and tolerances.

ENGG 222 | NUMERICAL METHODS IN ENGINEERING W/LAB (3-2-3)

Prerequisites: ENGG 140, MATH 230, MATH 231 | F, S, SI

Formulation and software implementation of numerical solutions to engineering problems. Numerical differentiation and integration, curve fitting, and interpolation. Solutions and engineering applications of nonlinear equations, systems of equations, and initial and boundary-value problems.

ENGG 255 | ENGINEERING DESIGN AND ECONOMICS (3-0-3)

Prerequisites: BIOL 201, PHYS 202 | F, S, SI

Principles of engineering design, including specifications, product synthesis, iterative analysis, prototyping, testing, and evaluation. Time value of money, equivalence, rate of return, and benefit-cost analysis. Engineering project management elements, approaches and processes including scheduling, WBS, estimating, and budgeting.

ENGG 270 | STATICS W/LAB (3-2-3)

Prerequisites: MATH 220, PHYS 201 with a grade of C or higher | F, S

Vector mechanics, forces, moments, and equivalent system of forces. Static equilibrium of particles and rigid bodies in two and three dimensions. Center of gravity, distributed forces, and internal forces. Analysis of simple systems including trusses, pulleys, and bars. Friction and moment of inertia.

ENGG 275 | DYNAMICS (3-0-3)

Prerequisites: ENGG 270, MATH 231 | S, SI

Review of particle dynamics, including energy and momentum. Kinematics of rigid bodies in two- and three-dimensional motion. Kinetics of rigid bodies, impulse and momentum in translational and rotational motion.

ENGG 300 | PROBABILITY AND RANDOM VARIABLES (3-0-3)

Prerequisite: MATH 220 | F

Introduction to probability and statistics in engineering. Axioms of probability, conditional probability and Bayes theorem. Random variables and probability distributions. Central limit theorem. Multiple random variables and joint distributions.

ENGL 101 | COMPOSITION AND RHETORIC (3-0-3)

Prerequisite: ENGL 100 with a P or P+, or placement by International TOEFL® and TWE or another internationally-recognized exam | F, S, SI, SII

This course develops students' ability to read and write critically in academic contexts. Students will engage with the writing process to join a discourse, build rhetorical awareness and practice composing in a variety of forms (e.g., narrative, expository, analytical, and/or argumentative essays). Coursework emphasizes inquiry and self-reflection as a means of strengthening students' understanding of their own and others ideas.

ENGL 102 | ADVANCED COMPOSITION AND RESEARCH (3-0-3)

Prerequisite: ENGL 101 | F, S, SI, SII

This course advances students' abilities to produce effective academic writing in English. Students will engage in a series of research-intensive writing projects to understand and define a current intellectual or social problem, explore a range of responses to that problem, and propose practical solutions that are framed within specific generic conventions. Coursework emphasizes empathy, critical thinking, creative problem solving, and the rhetorical nature of writing.

ENGL 103 | INTRODUCTION TO LITERATURE (3-0-3)

Prerequisite: ENGL 102 | F, S, SI, SII

This course introduces students to the study of literature. Through intensive close reading, students critically analyze literary texts from a variety of genres, movements, periods, and cultures, paying special attention to how nuances of language produce meaning in literature.

ENGL 210 | CREATIVE WRITING (3-0-3)

Prerequisite: ENGL 102 | F, S

The class introduces students to the various genres of creative writing—short story, creative non-fiction, and poetry. In this course students are exposed to examples of each genre; they participate in workshops evaluating both published and their own work. Over the course of the semester, students produce a portfolio of work in the genre(s) focused on that term. Specific course focus will be determined by the instructor.

ENGL 211 | BRITISH LITERATURE I (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course involves the study of major works and literary movements in British literature from the Old English period to, and including, the Restoration and the 18th century. Readings include those by Chaucer, Shakespeare, Swift, and Pope. The contributions of female authors are highlighted in various time periods.

ENGL 212 | BRITISH LITERATURE II (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This second course in the British Literature series involves the study of the major works and literary movements in British literature from the Romantic period to the present. The course begins with an extensive study of the Romantic poets, then moves on to the fiction of the Victorian Age and the early Twentieth Century, before focusing on the modern poets.

ENGL 221 | AMERICAN LITERATURE I (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course involves the study of major works and literary movements in American literature from the time of Discovery until the post-Civil War Reconstruction. The course begins with literature from explorers and Native

Americans and proceeds to literary works produced by colonists and immigrants, and then short fiction and philosophical treatises. The course culminates with a study of literature from the American Civil War period.

ENGL 222 | AMERICAN LITERATURE II (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This second course in the American Literature sequence involves the study of major works and literary movements in American literature from the American Civil War to the present. The works are produced by Native American, African American, Female and Expatriate authors as well as social commentators. Special attention is paid to determining what makes all of these works “American.”

ENGL 231 | WORLD LITERATURE I (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course offers a survey of world literature from ancient times through the middle of the 17th century. The readings include epics such as *Gilgamesh* and the *Odyssey*; stories within-stories, such as the *Decameron* and *The Thousand and One Nights*; novels and dramas; and *Paradise Lost*.

ENGL 232 | WORLD LITERATURE II (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course provides students with an exploration of literature(s) from various parts of the globe from the middle of the 17th century to the present. Readings include those from authors from Europe, Asia, Africa, South America, and the Middle East. Common themes between authors and texts are discussed.

ENGL 275-278 | SPECIAL TOPICS IN LITERATURE (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course provides a critical study of topics related to literature not specifically covered in other English courses. The specific topics will be determined by interests of the students and the instructor. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

ENGL 311 | WORLD MYTHOLOGY (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines key myths of the classical and ancient worlds and the literature, both ancient and modern, which is derived from them. Specific focus will be determined by the professor and may include mythology from a variety of cultures.

ENGL 312 | BIOGRAPHY/AUTOBIOGRAPHY (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines biography/autobiography as a literary genre. The course focuses on the characteristics of the genre and the personal, cultural and global impact of the genre.

ENGL 313 | CHILDREN'S LITERATURE (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course explores the historical and cultural development of children's literature from the 17th century through the latter 20th century.

ENGL 314 | COMING-OF-AGE NOVELS (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines numerous coming-of-age novels from various cultures to explore the potential “sameness” of the experience for the protagonists.

ENGL 315 | CONTEMPORARY FEMALE AUTHORS (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines the literary works produced by women authors from the midpoint of the 20th century to the present. Genres to be discussed include prose, poetry and essay.

ENGL 316 | PRIZE-WINNING AUTHORS (3-0-3)

Prerequisite: ENGL 103 | Upon demand

This course exposes students to works (both in total and in part) produced by those authors recognized by either the Nobel or Booker Prize Committee as outstanding. Authors and works discussed may change according to the instructor.

ENGL 475 | SPECIAL TOPICS IN LITERATURE (3-0-3)

Prerequisite: ENGL 103 | Upon demand

This course provides a critical study of topics related to literature not specifically covered in other English courses. The specific topics will be determined by interests of the students and the instructor. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

FINA 201 | PRINCIPLES OF FINANCE (3-0-3)

Prerequisites: ACCG 201, ECON 201, QUAN 201 | F, S, SI

The Principles of Finance course begins with cash-flow projections and evaluation of financial strength and weaknesses. Capital structure is dealt with followed by cost of capital and evaluation of capital investment opportunities. Students must receive at least a C grade in this course in order to register for additional Finance Major courses.

FINA 311 | CORPORATE FINANCE (3-0-3)

Prerequisite: a grade of C or higher in FINA 201 | F, S, SI

This course studies the principles and practices of managerial finance and considers financial instruments, sources and applications of funds, financial ratios, capital market analysis, capital budgeting, investments, and dividend decisions.

FINA 321 | FINANCIAL MARKETS AND INSTITUTIONS (3-0-3)

Prerequisite: a grade of C or higher in FINA 201 | F, S

This course looks at managing the business of managing money. Students study the market structure of global financial services including sources of funds, packaging, management, marketing and distribution of products and services. This course is an overview of the theory and practice of risk management, investment management, investment banking and market making.

FINA 331 | RISK AND INSURANCE (3-0-3)

Prerequisite: a grade of C or higher in FINA 201 | S

This course introduces basic risk theory and elementary risk management principles and techniques. Topics covered include individual life insurance and annuity products; property/liability insurance, life/health insurance, and selected social insurance programs; insurers and their operations; guidelines for efficient purchase and use of insurance products.

FINA 411 | INVESTMENT AND PORTFOLIO MANAGEMENT (3-0-3)

Prerequisite: FINA 311, QUAN 301 | F, S, SI

This course is an analysis of the nature and underlying theory of investments and its utilization by the individual investor and portfolio manager. Topics include capital market theory, portfolio theory and management, options contracts, interest rate futures, factors influencing security prices, and the workings of the New York and London Stock Exchanges.

FINA 421 | COMMERCIAL BANKING (3-0-3)

Prerequisite: FINA 411 | S, SI

This course will expose students to the commercial banking industry and the role and responsibilities of commercial bank officers. Topics covered will include the supervisory role of regulatory agencies, financial statement analysis, performance measurement, asset-liability management, tools and techniques for managing interest rate, credit, and liquidity risk.

FINA 431 | REAL ESTATE FINANCE AND INVESTMENT (3-0-3)

Prerequisite: a grade of C or higher in FINA 201 | S

This course is an introduction to the fundamental concepts, principles, analytical methods and tools used for making investment and finance decisions regarding real estate assets. A key objective of this course is to recognize the unique features that distinguish real estate investments from securities investments and from the corporate finance framework of investment decision making.

FINA 441 | MULTINATIONAL FINANCIAL MANAGEMENT (3-0-3)

Prerequisite: FINA 411 | F, S, SI

This course covers topics related to the financial operations of multinational corporations and international financial markets. The Foreign exchange rate determination, the parity conditions, and financing and investments by the multinational corporation will also be covered.

FINA 451 | FINANCIAL MODELING AND EMPIRICAL ANALYSIS (3-0-3)

Prerequisite: FINA 411 | F, S, SI

The objectives of the course are to provide students with an understanding of the theories and methodologies of financial modeling and empirical analysis; to enable students to perform financial analysis using computer models; and to apply financial principles in making corporate decisions. The MS Excel is used as a vehicle for numerically solving and graphically interpreting problems that arise in areas such as financial statement analysis, portfolio management, option valuation, bond and stock valuation and analysis, and foreign exchange.

FINA 461 | DERIVATIVE SECURITIES (3-0-3)

Prerequisite: FINA 411 | F, S

Topics to be covered in this course include the principles and pricing of options, futures and forward contracts, and swaps; arbitrage, hedging and advanced futures and options strategies. In this course, the concepts of portfolio risk and insurance and financial innovations are examined along with the use of derivative securities in corporate financial management.

FINA 491 | SPECIAL TOPICS IN FINANCE (3-0-3)

Prerequisite: Senior Status or approval of the Chair | Upon demand

This course is a critical study of theory and research related to selected topics in finance. The specific topics of the course will be determined by the interests of the students and the instructor.

FREN 101 | ELEMENTARY FRENCH I (4-1-4)

F

This course provides the student with an oral and written approach to beginning French grammar and conversation, with special emphasis on communication skills. Individual daily work with language tapes is an essential part of the program.

FREN 102 | ELEMENTARY FRENCH II (4-1-4)

Prerequisite: FREN 101 or equivalent | S

This course is a continuation of French 101, with expansion of vocabulary and possibilities of expression.

FREN 201 | INTERMEDIATE FRENCH I (4-1-4)

Prerequisite: FREN 102 or equivalent | F

This course continues the development of French language and culture from FREN 102, using an oral and written approach to advance French grammar and conversation, with emphasis on communication skills.

FREN 202 | INTERMEDIATE FRENCH II (4-1-4)

Prerequisite: FREN 201 or equivalent | S

This course is a continuation of FREN 201, with greater depth and using more complex language and maturity of expression and comprehension. Students encounter a wide range of current affairs, special topics like art, architecture and science, and issues of cultural and moral values.

GAME 101 | HISTORY OF GAME ART (3-0-3)

Corequisite: ENGL 101 | F, SI

This course explores the evolution of visual elements in video games, from early pixel art to modern 3D graphics. Students will examine how technological advancements, storytelling, and cultural trends have influenced game art and design. By analyzing classic games within their historical context, students will learn how artistic styles respond to technological and narrative demands, gaining insights into effective visual design for impactful gameplay. This course provides a foundation for aspiring game developers to critically assess and apply design principles in the gaming industry.

GAME 120 | GAME DESIGN FUNDAMENTALS (3-2-4)

Prerequisite: ENGL 101 | S, SI

This course introduces the basics of game design through lectures, hands-on activities, and team projects. Students will explore core elements like formal, dynamic, and dramatic aspects to create engaging player experiences. They will practice rapid prototyping, playtesting, and refining original game ideas, while studying key theories on mechanics, balancing, and storytelling. With a focus on the design process, playcentric theory, and communication, the course provides students with a strong foundation in game design. By the end, students will have a portfolio of game prototypes, with no prior programming experience required.

GAME 210 | APPLIED GAME DESIGN (2-2-3)

Prerequisite: GAME 120 | F, SI

This course explores the evolution of visual elements in video games, from early pixel art to modern 3D graphics. Students will examine how technological advancements, storytelling, and cultural trends have influenced game art and design. By analyzing classic games within their historical context, students will learn how artistic styles respond to technological and narrative demands, gaining insights into effective visual design for impactful gameplay. This course provides a foundation for aspiring game developers to critically assess and apply design principles in the gaming industry.

GAME 220 | INTRODUCTION TO GAME ENGINES (2-2-3)

Prerequisite: GAME 120 | S, SI

This course introduces Unity game engine for prototyping and developing video games, emphasizing the integration of object-oriented programming with C#. It covers essential Unity tools, including lighting, cinematography, UI, physics, audio, coding fundamentals and debugging practices. Building polished video games and prototyping.

GAME 310 | INTERMEDIATE GAME DESIGN AND PRODUCTION (2-2-3)

Prerequisite: GAME 220 | F, SI

Building on knowledge from GAME 220 Introduction to Game Engines, this course focuses on the full game design and production process. Students work in teams to design, prototype, and manage an original game project from concept to release. Topics include agile development, playtesting, and integrating art, sound, and visual effects into a game engine. Through regular feedback and collaboration, students refine gameplay, balance mechanics, and manage project scope. By the end of the course, students will have a completed game and enhanced project management skills, preparing them for real-world game production.

GAME 410 | ADVANCED GAME PROJECT I (3-2-4)

Prerequisite: GAME 310, GDES 340 or GDEV 320 | F, S

In this course, students simulate a real-world production environment, working in teams to develop a commercially viable game from concept to pre-alpha. They take on roles in design, art, narrative, engineering, sound, production, and marketing, emphasizing collaboration and project management. Through regular reviews and feedback from faculty and mentors, students refine their skills in ideation, prototyping, and iteration. The course also covers industry-relevant topics like representation, monetization, and business strategy, culminating in a tangible game project that demonstrates their ability to manage complex production tasks and produce a polished product.

GAME 420 | ADVANCED GAME PROJECT II (3-2-4)

Prerequisite: GAME 410 | F, S

This capstone course builds on GAME 410 Advanced Game Project I, as students work in teams to refine and complete a large-scale, commercially viable game. Focusing on the final stages of production, from alpha to gold master, students ensure their game is functional, engaging, and ready for release. The course emphasizes technical skills, project management, teamwork, and adaptability. Through milestone reviews, check-ins, and guest lectures, students gain insights into usability, quality assurance, and marketing. By the end, they will have a polished game and a comprehensive understanding of the game production pipeline, preparing them for careers in game Development.

GAME 461 | INTERNSHIP (0-15-3)

Prerequisite: Senior Status, approval of the Associate Dean | F, SI

Students gain experience by applying their academic knowledge to responsible roles outside the university context; they complete a minimum of 225 hours of training at a reputed studio in the gaming industry, under the supervision of the course instructor. Interns will experience professional teamwork, complete set tasks, create adequate solutions, and contribute to the overall creative work process, gaining clearer insight about their profession.

GDES 200 | CHARACTER DEVELOPMENT AND STORYTELLING FOR GAMES (2-2-3)

Prerequisite: COMM 101, ENGL 102 | F, SI

This course teaches the art of creating compelling narratives for interactive games, focusing on player engagement. Students explore techniques in character development, worldbuilding, and narrative design, crafting original game concepts with characters that drive the story. Through lectures, hands-on writing exercises, and guest speakers, students learn how narrative elements enhance gameplay and emotional connection. By analyzing existing games and different storytelling structures, they gain insights into how narrative design influences player experience. By the course's end, students will have developed a comprehensive narrative design deck for their game concept.

GDES 230 | ART FOUNDATIONS FOR GAMES (2-2-3)

Prerequisite: VCCC101, VCCC105 | S, SI

This course equips students with essential artistic skills for game visuals, focusing on drawing, color theory, and composition. Students will learn to create characters, environments, and objects that not only look visually striking but also convey the game's mood, story, and gameplay. Emphasizing timeless art fundamentals over changing technology, the course ensures students can adapt to evolving tools like 3D software and generative art while maintaining a critical artistic eye. Open to all drawing skill levels, the course combines theory with hands-on assignments designed to help students experiment and apply key principles, enhancing their creative abilities and attention to detail.

GDES 300 | VIDEO GAME EXPRESSIONS STUDIO (2-2-3)

Prerequisite: GDES 230 | F, SI

This course guides students to create narrative-driven video games, focusing on cinematic techniques (camera angles, lighting, sound) and player roles (protagonist, investigator). Students explore how these elements shape narrative experiences and engage players. Through lectures, discussions, playtests, and hands-on projects, they learn to design storytelling approaches and use Unity tools to enhance narratives. By the end, students will develop projects demonstrating their understanding of cinematic storytelling and player engagement, preparing them for advanced game development.

GDES 330 | GAME ART PRODUCTION (2-2-3)

Prerequisite: VCCC 205, VCDM 210 | S, SI

This course equips students with the skills to create engaging assets for video games, applying core art concepts directly to game development. Students will learn to craft characters, environments, props, and animations for 2D and 3D game worlds, using industry-standard workflows and best practices. The focus remains on core principles that are transferable across various software and production scenarios. Through hands-on projects, students will refine their skills and build a strong portfolio. By the end, they will develop a critical eye for evaluating digital art and technical requirements while maintaining artistic impact.

GDES 340 | PREPRODUCTION FOR CREATIVE DIRECTORS (2-2-3)

Prerequisite: GAME 310 | S, SI

This course bridges Intermediate Game Design and the capstone Advanced Game Design Project, focusing on refining game concepts through prototyping, playtesting, and pre-production documentation. Students explore ideation, iteration, and pitching to ensure their concepts are production-ready, whether they have a concrete idea or are still exploring options. The curriculum emphasizes developing comprehensive pre-production documents that communicate game vision, mechanics, and development plans. Students will also practice effective presentations to persuade faculty and industry guests to select their concept for the capstone project. By the end, they will have skills in analyzing concepts, creating prototypes, conducting playtests, and delivering compelling pitches.

GDEV 320 | PROGRAMMING GAME ENGINES (3-0-3)

Prerequisite: EECE 250 | F

The course examines the fundamentals of Game programming and game engine architecture. Students are introduced to vector math for games, rendering, animation, artificial Intelligence, collision detection, game physics, and user interfaces. They will design and develop fully functional games using C++/C# programming languages and SFML graphics library.

GDEV 400 | GAME ENGINE ARCHITECTURE AND DESIGN (3-0-3)

Prerequisite: EECE250; GDEV 320 | F

This course explores the fundamentals of game engine architecture, understanding the essential components, function requirements, purpose and interrelationships with the game engine. Students will examine the game engine development environment for various platforms and gaming applications, use of APIs and the analysis of performance and functionality, production pipeline and its impact in design and development.

GEOG 101 | WORLD GEOGRAPHY (3-0-3)

S

This course presents the important principles basic to the proper understanding of the world in which we live. Emphasis is placed on the study of the changing world map and the importance of this to human, economic, and political relationships.

GEOG 310 | HUMAN GEOGRAPHY (3-0-3)

Prerequisites: ENGL 102, BIOL 201 or SCIE 201 or SCIE 211 | Upon demand

This course examines the relationships between people and place, whether purposeful or unintended. It examines what factors play the greatest role in determining where large groups of people situate themselves. Some aspects to be included in class discussion are migration, displacement, culture, transportation, natural resources and environment.

HIST 201 | AMERICAN HISTORY FROM THE BEGINNINGS TO RECONSTRUCTION (3-0-3)

Corequisite: ENGL 101 | Upon demand

This course examines the history of what ultimately became the United States of America. HIST 201 traces the development of the New World from discovery, through colonization, the war for independence, up through and including the Civil War and Reconstruction. The course focuses on how the various political, cultural, and social issues of the various time periods combined to influence the landmark events in the development of the nation.

HIST 202 | THE UNITED STATES IN THE CIVIL WAR (3-0-3)

Corequisite: ENGL 101 | Upon demand

This course surveys American history from the Civil War to the present. Students examine the political, social, and cultural changes that the United States underwent during the Civil War and Reconstruction, the Industrial Revolution, the Great Depression, the world wars, the Cold War, the Civil Rights era, the conflict in Vietnam, the Reagan Revolution, and post-Cold War globalization.

HIST 212 | MODERN EUROPE (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course surveys European history from the early-modern era to the present. Students evaluate the broader trends of the last 500 years of European history. Themes include the appearance of modern European nations, their relationships with each other and the wider international community; industrialization; the world wars; the rise and fall of colonial empires; and currents of regional unity from the Reformation to the Cold War.

HIST 251 | WORLD HISTORY TO 1500 CE (3-0-3)

Prerequisite: ENGL 102 | S

This course surveys history from the appearance of humanity to the eve of the Columbian Exchange. Students interpret primary sources while exploring the relationship between the environment and global history; the emergence of government and society; the evolution of cross-cultural trade; and war and peace in the preindustrial world.

HIST 252 | WORLD HISTORY SINCE 1500 CE (3-0-3)

Prerequisite: ENGL 102 | F

This course surveys the rise of the modern world. Students critically evaluate and discuss historical interpretations while examining the interconnected histories of global communications and trade; industrial capitalism and technology; the transition from a world of empires to nation-states; liberalism, Marxism, and other ideologies; and war and peace in global affairs from the Spanish conquest of Mexico to the rise of the Global South.

HIST 310 | THE U.S. IN WORLD AFFAIRS (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course explores the history of American foreign relations since 1945. It introduces students to the most recent literature treating the United States and world affairs.

HIST 350 | REVOLUTION AND REACTION IN THE GLOBAL COLD WAR (3-0-3)

Prerequisites: ENGL 102, HIST 252 | *Upon demand*

This course evaluates revolution and reaction in the Global Cold War, a conflict that involved the Soviet Union, the United States, Europe and the Global South. It familiarizes students with the most recent literature in international Cold War history while teaching them to test social-scientific theories of revolution against empirical case studies.

HIST 401 | CONTEMPORARY HISTORICAL ISSUES (3-0-3)

Prerequisites: HIST 252, POLS 200 or POLS 210 | *Upon demand*

The interdisciplinary research seminar explores issues and trends in contemporary history related to international affairs, global and comparative history, or area studies in Latin America, Africa, and/or Asia. Students identify a problem while reviewing the most recent literature on it. They conduct primary-source research to offer their own findings.

HUMN 210 | INTRODUCTION TO DIGITAL HUMANITIES (3-0-3)

Corequisite: ENGL 101 | *F, S*

This course introduces the methods and tools used in digital humanities research. Through case studies and hands-on projects, it explores text mining, data visualization, network analysis, and digital mapping techniques while engaging with ethical and theoretical questions surrounding digital scholarship. Topics include digital archives, classification systems, interactive visualizations, and computational approaches to the study of traditional humanities disciplines.

HUMN 275-278 | SELECTED TOPICS IN HUMANITIES (3-0-3)

Upon demand

Topics in the Humanities which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

HUMN 398 | THE CORE EXPERIENCE (3-0-3)

Corequisite: *Junior Status* | *F, S*

This course draws on the Great Books tradition by engaging with seminal texts across disciplines and geographies to explore one of the following themes: Knowledge, Identity, Culture, Power, or Progress. Through close reading, seminar-style discussions, interdisciplinary workshops, and experiential learning opportunities, students strengthen their ability to think critically, understand diverse perspectives, communicate complex ideas, and reflect on their personal commitments. The course culminates with a multi-modal research project.

HUMN 475 | SPECIAL TOPICS IN HUMANITIES (3-0-3)

Upon demand

Advanced topics in the Humanities which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

IDES 121 | HISTORY OF INTERIOR DESIGN I (3-0-3)

Prerequisite: ENGL 101 | *S, Upon demand*

This is the first of two sequential courses that cover the history of architectural interiors from the third millennium BC to the Classical Revival period in the 21st century, including local heritage and design styles. Knowledge of the language of architecture, its terminology and recognition of period styles are required. Emphasis is placed on the historical and intellectual context of selective examples of architecture and interior design, along with their environmental and social relevance.

IDES 191 | INTERIOR DESIGN STUDIO I: VISUAL EXPRESSION AND COMPOSITION (0-8-4)

F, S

This studio introduces the fundamentals of form and composition, drawing from life, and perspective drawing. Students learn sketching and formal one and two-point perspectives. These are the building blocks for all design; the ability to understand form and composition is essential, as is the ability to sketch ideas.

IDES 192 | INTERIOR DESIGN STUDIO II: DRAWING FOR INTERIOR DESIGN (0-8-4)

Prerequisite: IDES 191 | *S, and Upon demand*

This studio introduces technical drafting in both two and three dimensions. Students learn basic interior drafting vocabulary as well as isometric and axonometric views. Students learn the theory and practice of dimensioning techniques and scale. The studio integrates the above as part of the design process.

IDES 214 | TEXTILES FOR INTERIORS (3-0-3)

Prerequisite: IDES 191 | F

This course involves the study of textiles applied to interior design. Students learn textile composition, properties and performance characteristics alongside sustainability in relation to textiles. The knowledge gained is applied to interior spaces.

IDES 266 | RESOURCES AND MATERIALS (3-0-3)

Prerequisite: IDES 192 | S

This course introduces students to the recognition and specification of appropriate resources and materials used in interior design also the inherent characteristics of those materials. The student learns the application techniques and code regulations that influence a designer's selection. The student will be familiar with the local market materials, prices, and strongly initiated towards the use of new building technologies. Preliminary cost estimating is also introduced.

IDES 291 | INTERIOR DESIGN STUDIO III: 3D SPATIAL DESIGN (0-8-4)

Prerequisite: IDES 192 | F, and upon demand

This studio covers the fundamentals of two and three-dimensional design, color theory, and model making techniques as they relate to interior design and space analysis. Design Principles and Elements of Design are introduced and applied. Color theory work includes hue, value, intensity, aesthetic and psychological implications. The studio integrates the above as part of the design process.

IDES 292 | INTERIOR DESIGN STUDIO IV: SPACE PLANNING AND UNIVERSAL DESIGN (0-8-4)

Prerequisite: IDES 291 | S, and upon demand

This course introduces the human element into the built environment. The following topics are studied and applied: anthropometrics, ergonomics, space planning standards, and Universal Design principles. The relationship between natural and built environments is discussed. Evidence Based Design and structural details are introduced and integrated into the design process. The course exposes students to working drawings and detailing and develops their understanding of the relationship between drawings and specifications.

IDES 322 | HISTORY OF INTERIOR DESIGN II (3-0-3)

Prerequisite: IDES 121 | F, SI

This is the second of two sequential courses that cover the history of architectural interiors from the industrial revolution to the early Modernism period of Europe and North America and onto a world setting for the variations in late Modernism before considering various new movements of the twenty-first century. Local and regional history are also covered. Emphasis is placed on the historical and intellectual context of selective examples of architecture and interiors, along with their environmental, technological and social relevance.

IDES 331 | PROFESSIONAL PRACTICE (3-0-3)

Prerequisite: IDES 391 | S, SI

This course introduces Interior Design business practice and procedures, including the different roles within the project design team, and appraisal of topics related to the profession.

IDES 363 | INTERIOR LIGHTING (3-0-3)

Prerequisites: ARCH 101 (for ARCH students), IDES 192, MATH 101 | F, SI

This course introduces the student to fundamentals of interior lighting design, recognition of light sources and systems, and light measurement and calculation. Students learn to analyze the spatial requirements for light, select proper systems, calculate the level of lighting, draw reflected ceiling plans, lighting legends and lighting schedules. Emphasis is placed on communicating a design solution by accomplishing projects that are application oriented.

IDES 365 | PROCESS MODELING (3-0-3)

Prerequisite: DDFT 268 | F, SI

This course introduces students to the 3D design Process Modeling from conception to execution. Three main areas of instruction are addressed: drafting, modeling, and drawing organization. Students will be able to construct detailed 3D models of interior spaces, architectural features, and furniture.

IDES 369 | BUILDING SYSTEMS AND CODES (3-0-3)

Prerequisites: *IDES 292, IDES 266, DDFT 268 | F, SI*

This course introduces students to the basic elements of building construction, building systems and building codes. Emphasis is placed on the interaction between the design idea and the realities of construction, coordination and regulations in the design process.

IDES 374 | HOSPITALITY DESIGN (3-0-3)

Prerequisite: *ARCH 202 or IDES 391 | S, and Upon demand*

This course introduces hospitality design. Students are introduced to the hospitality industry through comparative and client analysis. A hospitality interior design project is produced, applying anthropometric theory, sustainability and hospitality codes/standards.

IDES 375 | FOOD AND BEVERAGE OUTLET DESIGN (3-0-3)

Prerequisite: *Arch 202 or IDES 292 | F, and upon demand*

This course introduces students to the principles of food and beverage outlet design and identifies several typologies that are researched and analyzed from the perspectives of design and space planning, materials technology, FF&E selection, functions and environmental comfort levels.

IDES 376 | WELLNESS AND SPA (3-0-3)

Prerequisite: *Arch 202 or IDES 292 | S, and upon demand*

This course introduces students to the principles of wellness and spa design and identifies several typologies that are researched and analyzed from the perspectives of historical evolution, design and space planning, materials technology, functions and environmental comfort levels.

IDES 380-385 | INTERIOR DESIGN STUDY TOUR (3)

Prerequisite: *Junior Status or Dean's approval | Upon demand*

In this course students analyze specific aspects of interior design, technology, and/or furniture design in a global context, through direct analysis of actual case studies, or by participation in relevant worldwide workshops, exhibitions and events.

IDES 386 | ISLAMIC GEOMETRIC PATTERN DESIGN (3-0-3)

Prerequisite: *IDES 291 | Upon demand*

In this course students study geometric patterns found in Islamic art and architecture and engage in the creative process and development from a craftsman's point of view.

IDES 391 | INTERIOR DESIGN STUDIO V: FURNITURE DESIGN AND DETAILING (0-8-4)

Prerequisite: *IDES 292 | F, and upon demand*

This studio focuses on issues related to custom furniture and millwork, as well as the building structures that they connect to. Through the study of the human form and by researching appropriate materials and construction techniques, students develop a full set of working drawings and specifications.

IDES 392 | INTERIOR DESIGN STUDIO VI: SMART DESIGN (0-8-4)

Prerequisite: *IDES 391 | S, and upon demand*

In this studio course, students participate in a design competition where they apply research and theory to develop concepts focusing on smart technologies, materials, and environmental sustainability.

IDES 441 | SENIOR THESIS: RESEARCH AND PORTFOLIO (1-4-3)

Prerequisites: *IDES 392, IDES 322, IDES 363 | F, and upon demand*

This capstone course consists of a research study that includes a preliminary design of the senior project. Students analyze a building type in terms of program, norms, building codes, form and function, architectural elements, and site selection. The final outcome consists of a short thesis along with a professional portfolio.

IDES 464 | ACOUSTICAL AND THERMAL DESIGN (3-0-3)

Prerequisite: *IDES 266 or ARCH 211 | S, SI*

In this course, students apply passive and active acoustical and thermal principles and strategies to interior design.

IDES 470 | SPECIAL TOPICS IN INTERIOR DESIGN (3-0-3)

Prerequisite: *Approval of the Chair | F, S, and upon demand*

This is an advanced course in which students participate in topics to be selected by the instructor, with the approval of the Chair, and which develops an aspect of design and/or presentation. Research, critical analysis, application of the research and analysis to the design and presentation will be required in this course.

IDES 471 | INTERNSHIP (0-25-2)

Prerequisites: *DDFT 268, IDES 391, and Senior status | SI and Upon demand*

With the aid of the supervising instructor from the Department in which a student is enrolled, the student participates in a practical “on-site” internship in which theoretical principles are applied to work situations under professional supervision.

IDES 472 | KITCHEN AND BATH DESIGN (3-0-3)

Prerequisite: *IDES 391 | S, and upon demand*

This course introduces the students to kitchen and bathroom design, systems, products and finishes, standards and codes alongside Universal Design considerations. Emphasis is given to problem solving skills through integrated design techniques.

IDES 479 | INTERNSHIP A (0-25-3)

Prerequisites: *IDES 471 | SI and Upon demand*

This course emphasizes focused professional development for the senior student prior to entering the profession as a graduate designer and follows on from the generalized experience gained from completing IDES 471. As a consequence senior students are required to demonstrate knowledge and experience of interior design project management systems primarily through completing a case study of a recently completed or ongoing project at the host office. Essential documentation produced will also include a course file and a professional diary, the latter which will detail the student’s daily office and site experience. The role of a faculty practical training supervisor is central to the success of this course in terms of placing, advising and periodically supervising students while liaising with the professional designer counterpart in the host company, before evaluating final course materials submitted.

IDES 491 | INTERIOR DESIGN STUDIO VII: COMPREHENSIVE DESIGN (0-8-4)

Prerequisite: *IDES 392 | F, and upon demand*

This studio involves completing a full set of contract documents and specifications for a term-long project. Emphasis is placed on building services, multi-story spaces, and building envelope as well as people with different needs.

IDES 492 | INTERIOR DESIGN STUDIO VIII: CAPSTONE DESIGN (0-8- 4)

Prerequisites: *IDES 491, IDES 441 | S, and upon demand*

This capstone studio builds upon research done in IDES 441 and culminates in the design of a project. Having researched and analyzed a building type, students apply their findings an interior project that demonstrates professional skills.

INST 201 | INTRODUCTION TO INTERNATIONAL DEVELOPMENT | (3-0-3)

Prerequisite: *ENGL 102 | S*

This course introduces students to the history of international development as well as current debates and issues in the field. The course explores competing theories and practices of development while critically evaluating their underlying assumptions, processes, and outcomes. The course will consist of four main sections: history of development thought, development paradigms, development actors and institutions, and contemporary development issues.

INST 325 | HISTORY OF PHILANTHROPY AND NON-PROFIT ORGANIZATIONS (3-0-3)

Prerequisite: *ENGL 102 & Junior Status | F*

This course introduces the history and institutions of philanthropy and nonprofit organizations. From the early pioneers to the philanthrocapitalists of the 21st century, the course analyzes the long history of philanthropy and its ability to seed and accelerate shifts in public policy. The course provides a philosophical and organizational overview of the roots and practice of philanthropy in the United States, Europe, and in the Arab/Islamic world.

INST 360 | POVERTY AND INEQUALITY | (3-0-3)

Prerequisite: ENGL 102 & Junior Status | Upon demand

Drawing on the most recent academic debates in social and political science, this course introduces students to the study of poverty and inequality. This course examines the contemporary forms of poverty in the world, and patterns of inequality within and between nations. This course surveys a variety of topics associated with poverty and inequality, including displacement, economic insecurity, labor exploitation, social marginalization and ecological degradation. Finally, this course explores the historical root causes as well as the most current political and economic conditions of poverty and inequality.

INST 361 | FORCED MIGRATION AND REFUGEES | (3-0-3)

Prerequisite: ENGL 102 and Junior Status | F (odd years)

Drawing on the most recent academic debates in social and political sciences, this course offers students the opportunity to delve deeper into the issues of forced migration and refugees. This course examines the contemporary patterns of population displacement within and across international borders. With a global focus, this course surveys a variety of topics associated with forced migration, including internal displacement, refugee movements, humanitarianism, international aid, border controls, dispossession, social and political exclusion, and media representation of war and displacement.

INST 388 | RESEARCH METHODOLOGY | (3-0-3)

Prerequisite: ENGL102, MATH201 | F, SI

This course in research methods prepares International Studies students to understand materials and issues associated with but not limited to the logic of the scientific method, research design, and qualitative and quantitative analysis of data. The course provides a foundation from which students may use the knowledge and practices gained in this course throughout the rest of their undergraduate program and the Capstone courses.

INST 398 | INTERNATIONAL STUDIES INTERNSHIP | (0-15-3)

Prerequisite: Junior Status | SI and Upon demand

With the aid of a supervising instructor and under the direct supervision of a member of the host organization, students participate in a practical onsite internship in which theoretical principles are applied to “real world” situations.

INST 498 | INTERNATIONAL STUDIES CAPSTONE I (3-0-3)

Prerequisite: INST 388 and successful completion of 90 credit hours | F

This course provides students with the fundamentals of conducting research. In addition, it is during this course that students receive approval for their project which involves all of the core areas of the Bachelor of Arts degree in International Studies. This project must be approved prior to students’ enrollment in INST 499.

INST 499 | INTERNATIONAL STUDIES CAPSTONE II (3-0-3)

Prerequisite: INST 498 | S

This course involves the production of the approved project from INST 498. Students meet on a weekly basis with their instructor to discuss progress and/or challenges to completing the project. Students are ultimately required to given an oral presentation to a panel prior to final completion of the course. INST 499 is a requirement for graduation for all students in the Bachelor of Arts in International Studies program.

JOUR 209 | SELECTED TOPICS IN JOURNALISM (2-2-3)

Prerequisite: Approval of the department head | Upon demand

This course aims at presenting various topics in Journalism that are of interest to the students and the instructor. The course intends to widen and deepen the students’ understanding of various issues related to nontraditional means of reporting.

JOUR 301 | VISUALIZING NEWS (2-2-3)

Prerequisite: COMM 222 | F

This course introduces students to basic design elements used to make a news story visually effective. Imagery such as still photography, television video, and video designed specifically for the web will also be explored. The course will follow a typical production workflow, including layout and design, the use of typography and color, preparing images and graphic elements for print, the web, and other media platforms.

JOUR 302 | NEWSROOM MANAGEMENT AND DECISION MAKING (3-0-3)

Prerequisite: COMM 222 | S

This course requires students to examine decision-making in the newsroom, explore illustrative case studies and develop their own assessments of what constitutes a good decision and how to make one. More often than not, there are no absolutely right answers, but the goal is making a better decision through thoughtful discussions of the type that take place daily in professional newsrooms.

JOUR 321 | REPORTING (2-2-3)

Prerequisite: COMM 222 | F

This course is an introduction to the practice and craft of gathering and writing information for news media. Students will develop sound news judgment and writing skills that will enable them to produce and edit content across multiple platforms. As much as possible, the course will be responsive to actual news, both local and international.

JOUR 322 | ADVANCED REPORTING (3-0-3)

Prerequisite: JOUR 321 | S

This course covers advanced concepts of news gathering, interviewing and writing. Each student will choose a topic to cover, and develop a news story and long-form writing project on that topic. In addition, students will produce a video or print story on a separate, local topic.

JOUR 323 | EDITORIAL AND CRITICAL WRITING (3-0-3)

Prerequisites: COMM 222, ENGL 103 | Upon demand

This course provides students with an intensive evaluation of their opinion writing, including editorials, op-ed columns, arts and entertainment criticism, and opinion pieces related to sports, business, politics, and other realms of journalistic writing.

JOUR 324 | BROADCAST JOURNALISM (2-2-3)

Corequisite: JOUR 321 | F

This class prepares students to become broadcast journalists. The course teaches students to produce reports and packages specifically destined for broadcast on TV, radio or online.

JOUR 401 | CURRENT ISSUES IN JOURNALISM (3-0-3)

Prerequisite: Senior Status | Upon demand

Examines a range of topics not covered or covered only briefly in other courses. These may include coverage of business, environmental issues, sports, conflict, and other matters with which graduating students should have some familiarity.

JOUR 402 | CONTEMPORARY PERSPECTIVES IN JOURNALISM (3-0-3)

Prerequisite: Senior Status | Upon demand

A seminar course in which students analyze and discuss in a sophisticated way critical issues in the news business, ranging from media economics to the impact of news coverage on societal institutions. This course provides students the opportunity to design and carry out an independent venture, such as an extensive research paper, or another extended journalism project under faculty supervision.

JOUR 441/DPST 441 | THE DOCUMENTARY (2-2-3)

Prerequisite: DPST 340 (for DPST students) or JOUR 322 (for JOUR students) | F

This course provides an overview of the history, theory, and genres of documentary films. Students learn to analyze and critique a variety of historical and contemporary documentaries, while developing and producing short documentaries through team work.

JOUR 461 | MEDIA AND POLITICS IN THE MIDDLE EAST (2-2-3)

Prerequisite: ENGL 103, COMM 103, and Junior Status | F

This course examines the role of the international media in the politics of the Middle East. The course surveys how the international media chooses to cover local conflicts. It addresses questions concerning the interplay between national interests and objectivity in news coverage, and the role of media in shaping the course of events and judging their outcomes in the region.

JOUR 462 | CAPSTONE PROJECT (2-2-3)

Prerequisite: JOUR 322 | S

This course provides individual or small groups of students working with a faculty advisor the opportunity to design and carry out an independent venture, such as an extensive research paper, an online magazine article, or other complex journalism project.

JOUR 463 | INTERNSHIP (0-15-3)

Prerequisite: Senior Status | S, and Upon demand

A carefully supervised internship with a media organization approved by the faculty supervisor. Students are required to submit a detailed ongoing journal and a final report as defined by the faculty supervisor.

MATH 101 | MATHEMATICS FOR THE ARTS (3-0-3)

Prerequisite: placement by ACCUPLACER™ or MATH 090 | F, S, SI

This course surveys traditional and contemporary topics in mathematics, such as counting techniques, probability and statistics, and the mathematics of personal finance. It includes basic geometry of interest to students applicable in the arts program.

MATH 105 | PRECALCULUS FOR ARCHITECTURE (3-3-3)

Prerequisite: placement by SAT or ACCUPLACER™, or a Grade of P or P+ in MATH 095 | F, S, SI

This course aims to provide architecture students with some of the mathematical tools needed in their field. Focus will be placed on applications in various real-life models including architecture and designs. Technology is used extensively in solving equations and graphing functions. Topics include: 2D and 3D Geometry, Analytic Geometry, Functions, Trigonometry, Conic sections and Vectors.

MATH 200 | CALCULUS FOR BUSINESS (3-0-3)

Prerequisite: placement by ACCUPLACER™ or a Grade of P or P+ in MATH 103 | F, S, SI, SII

This course develops concepts of calculus used in the business environment. Topics include functions, limits, derivatives, and integrals, with a focus on applications in business and economics.

MATH 201 | FUNDAMENTALS OF STATISTICS (3-0-3)

Prerequisite: MATH 101 | S, SI

This course aims at providing students with a proper understanding of basic concepts of data collection, data analysis, and statistical computing. Students will be able to use statistical techniques to collect, organize, and analyze data, find measures of variation, and perform regression analyses and hypothesis testing.

MATH 205 | CALCULUS FOR ARCHITECTURE (3-0-3)

Prerequisite: placement by ACCUPLACER™ or MATH 105 | F, S, SI

This course aims to provide architecture students with some of the mathematical tools needed in their field. Technology is used extensively in graphing and computing derivatives and integrals.

Topics include: Concepts of differentiation and integration with applications such as motion, optimization and Geometry.

MATH 210 | CALCULUS I (3-0-3)

Prerequisite: placement by ACCUPLACER™, or MATH 104 with a grade of P or P+ | F, S, SI

This course is an introduction to differential and integral calculus of functions of a single variable. Topics include limits and continuity; derivatives, integrals and their applications.

MATH 220 | CALCULUS II (3-0-3)

Prerequisite: MATH 210 with a grade of C or higher | F, S, SI

This course covers the notions of sequences and series, integration techniques, and applications of calculus to planar curves. Topics include integration by parts, partial fractions, trigonometric substitution, improper integrals, sequences and series, polar and parametric curves.

MATH 230 | LINEAR ALGEBRA (3-0-3)

Prerequisite: MATH 220 with a grade of C or higher | F, S

This course introduces the fundamentals of linear algebra. Topics include vectors and 3D-Geometry, matrix algebra and determinants, systems of linear equations, linear transformations and their matrix representation, vector spaces, the eigenvalue problem, inner product spaces, orthogonality, and various applications.

MATH 231 | DIFFERENTIAL EQUATIONS (3-0-3)

Prerequisite: *MATH 220 with a grade of C or higher | F, S*

This course covers basic concepts, methods and techniques for solving ordinary differential equations (ODEs) and their applications in engineering. Topics include first and higher order ODEs, Laplace transforms, power series solutions and systems of ODE's.

MATH 240 | MULTIVARIABLE CALCULUS (3-0-3)

Prerequisite: *MATH 230 | F, S*

This course develops essential concepts of multivariable calculus. Topics include surfaces, vector-valued functions, functions of several variables, multiple integrals, vector fields, line and surface integrals, Green's theorem, Stokes' theorem, and Divergence theorem.

MATH 243 | STATISTICS FOR APPLIED SCIENCES (3-0-3)

Prerequisite: *None | F, S, SI*

This course is an introduction to statistical analysis, with a focus on application in medicine or other health-related areas. Topics include data displays, basic principles of probability, and common probability distributions like the binomial, Poisson, and normal distributions; inferential statistics, hypothesis testing, and confidence intervals; and regression analysis.

MATH 250 | DISCRETE MATHEMATICS (3-0-3)

Prerequisite: *MATH 210 | S*

This course introduces the mathematical foundation of computing. Topics include Logical reasoning and proofs, sets and functions, mathematical induction and recursion, counting principles and graph theory.

MATH 310 | HISTORY OF MATHEMATICS (3-0-3)

Prerequisite: *MATH 101 or higher | F*

This course examines the content of historical documents that trace the roots of arithmetic, algebra and geometry from ancient times until the 13th century. The sources come from a variety of civilizations and cultures, and reveal common threads in the development of mathematics due to the needs of society, along with differences caused by cultural influences.

MATH 320 | CONTEMPORARY PROBLEM SOLVING (3-0-3)

Prerequisite: *MATH 101 or higher | S*

A variety of thinking processes and specific techniques are introduced for defining and solving problems and for building mathematical models. Those tools are then used by students in games of strategy, mathematical problems and real-world situations, with the prime directive being: "Solve that problem!"

MEST 100 | THE ARABIC LANGUAGE (3-0-3)

F, S, SI

This course introduces students to the history, development, and social context of the Arabic language, including the differences between classical, modern, and vernacular Arabic and the domains within which these varieties have been used. The course familiarizes students with the relationships between the Arabic language and other social variables such as nationality, religion, urbanization, social class, gender, and culture.

MEST 101 | ELEMENTARY ARABIC I (4-1-4)

F, S, SI

In this course students learn to read and write at the Novice Mid-level in Modern Standard Arabic (MSA), as per the American Council on the Teaching of Foreign Languages' Standards. Students learn speaking and listening skills in MSA and one Arabic dialect. This course is not open to native Arabic speakers.

MEST 102 | ELEMENTARY ARABIC II (4-1-4)

Prerequisite: *MEST 101 | S, SI*

In this course students learn to read and write at the Novice High-level in Modern Standard Arabic (MSA), as per the American Council on the Teaching of Foreign Languages' Standards. Students learn speaking and listening skills in MSA and one Arabic dialect. This course is not open to native Arabic speakers.

MEST 200 | ARABIC FOR COMMUNICATION II (3-0-3)

F, S, SI

This course develops students' practical communication skills in Modern Standard Arabic and a regional dialect. Students will learn to navigate a variety of everyday tasks using both oral and written Arabic, including the ability to narrate, describe, compare/contrast, and express opinions about routine events and situations. Students will also develop the literacy skills needed to read short, straightforward texts on a variety of topics and in multiple genres.

MEST 201 | INTERMEDIATE ARABIC I (4-1-4)

Prerequisite: MEST 102 | F

In this course students learn to read and write at the Intermediate Low-level in Modern Standard Arabic (MSA), as per the American Council on the Teaching of Foreign Languages' Standards. Students learn speaking and listening skills in MSA and one Arabic dialect. This course is not open to native Arabic speakers.

MEST 202 | INTERMEDIATE ARABIC II (4-1-4)

Prerequisite: MEST 201 | S

In this course students learn to read and write at the Intermediate Mid-level in Modern Standard Arabic (MSA), as per the American Council on the Teaching of Foreign Languages' Standards. Students learn speaking and listening skills in MSA and one Arabic dialect. This course is not open to native Arabic speakers.

MEST 210 | INTRODUCTION TO MIDDLE EAST HISTORY (3-0-3)

Prerequisite: ENGL 102 | F, S, SI

This course introduces students to the history of the Middle East since the advent of Islam. It begins with the eclipsing of the Byzantine and Sassanid empires in the early seventh century and ends with the collapsing of the Ottoman Empire in the aftermath of WWI. Particular attention will be given to the themes of historical change and continuity and cooperation and conflict in the Middle East over the past fourteen centuries.

MEST 275 | SELECTED TOPICS IN MIDDLE EASTERN STUDIES (3-0-3)

Upon demand

A critical study of theory and research related to topics in Middle Eastern studies not covered by other courses. The specific topics will be determined by interests of the students and the instructor. Students should check with the Registrar or Chair of the Department of International and Middle Eastern Studies to determine course content for a specific semester.

MEST 280 | THE U.A.E. EXPERIENCE (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines the U.A.E. as a post-oil society in the Middle East. The relevant aspects of the federation, including the U.A.E.'s economic bases (oil, a diversified economy) and its internal challenges (Emiratization, water and electricity consumption, etc.) will be analyzed. Emphasis will be put on Dubai as an example of a global city in a traditional environment.

MEST 301 | ARABIC PROFICIENCY I (3-0-3)

Prerequisite: Placement exam | F, S, SI

This course provides advanced Arabic students with the linguistic skills required to understand and analyze Arabic language media and literature. The course will be in Modern Standard Arabic (MSA) and use authentic texts, which may include limited material in regional dialects. Emphasis will be placed on vocabulary acquisition, extensive reading and analysis, and strengthening students' skills in MSA.

MEST 302 | ARABIC PROFICIENCY II (3-0-3)

Prerequisite: Placement exam or MEST 301 | F, S, SI

This course builds on and expands skills from MEST 301, particularly those required to analyze Arabic media and literature. It is intended for advanced Arabic students. The course will be conducted in Modern Standard Arabic (MSA) and use authentic texts, which may include limited use of regional dialects. Emphasis will be placed on vocabulary acquisition, intensive writing, and students' abilities to create content in MSA that is appropriate for formal, professional audiences.

MEST 310 | ISLAMIC CIVILIZATION (3-0-3)

Prerequisite: ENGL 102 | F, S

This course explores various aspects of Islam as a civilization and the key achievements made by those who participated in the pursuit of knowledge under the cultural aegis of Islam. Developments in the fields of philosophy, mathematics, astronomy and medicine are some of the major themes highlighted as the course charts the role of Islamic civilization in the transmission of knowledge and ideas to the Mediterranean, Europe and beyond.

MEST 315 | HISTORY OF THE MODERN MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course concentrates on the emergence of the modern Middle East by examining its transformation into nation states following the collapse of the Ottoman Empire after WWI, the mandate period and the end of colonial rule. The course will focus on key events and developments across the region from Egypt to Iran, and from Turkey to the Gulf States during the last century.

MEST 317 | ARABIC LITERATURE IN TRANSLATION (3-0-3)

Prerequisite: ENGL 102 | SI

This course considers a representative sample of Arabic prose, short stories, novels and plays with a brief account of critical background of the various genres.

MEST 318 | CULTURES OF THE MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | F

This course aims to explore the diversity, complexity, and dynamism of social and cultural life in the Middle East. It discusses a range of social forms and identities produced, consumed, and contested by the people living in this region, and juxtaposes general theories about the Middle East with ethnographic studies based on specific localities and communities.

MEST 319 | POLITICS IN THE MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | SI

This course looks at the political structures and systems of governance across the contemporary Middle East as well as the historical factors that led to their formation. The course also examines the complex but significant relationship between local politics and politics at the level of state and government within individual Middle East countries in order to explain how this relationship has shaped policies both at the regional and at the international levels.

MEST 320 | THE QUR'AN: TEXT, HISTORY, AND MEANING (3-0-3)

Prerequisite: ENGL 102 | F

This course examines the historical aspects of the Qur'an, such as the period of its 'revelation', its subsequent codification and the tradition of its interpretation. The course also focuses on the contents of the Qur'an as well as its place in various Muslim intellectual traditions, both medieval and modern.

MEST 323 | ISLAM: HISTORICAL AND SOCIETAL ASPECTS (3-0-3)

Prerequisite: ENGL 102 | S, SI

This course is a study of the Islamic religious tradition and its development during various historical periods. The course focuses on the beliefs and practices of Muslims across diverse cultural landscapes as well as on the major schools of thought within Islam. The scope of the course extends to the contemporary period to include an analysis of modern intellectual movements.

MEST 327 | ISLAMIC POLITICS (3-0-3)

Prerequisite: ENGL 102 | F

This course will focus on Islam as the language of politics at both the societal level and at the level of state and government. It will examine the influence of the teachings of Islam and Islamic political thought on the organization of society in the Muslim world, and account for the emergence of Islamic states, Islamist movements and the contemporary phenomenon of 'political Islam'.

MEST 329 | ISLAMIC ART AND ARCHITECTURE (3-0-3)

Prerequisite: ENGL 102 | F, S, SI

This course is a general survey of Islamic art in its various forms from its beginnings in the 7th century to the early modern period. The development will be traced through the examination of architecture, manuscript illustration, textiles, pottery and other art forms.

MEST 343 | BUSINESS IN THE MODERN MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | S

This course offers descriptive and prescriptive approaches to the economies of the Middle East. The course examines the current status of the economies in the region and how they developed. In addition, discussion will focus on economic challenges in the region. Suggestions for addressing these challenges as well as the consequences of ignoring them will also be discussed.

MEST 350 | RELIGIONS OF THE MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines the beliefs, practices and institutions of the three Abrahamic faiths in the Middle East: Islam, Christianity, and Judaism. This course also considers the shared origins and histories of these three religions, in particular the history of their interaction and interdependence in the Middle East.

MEST 352 | CONFLICTS IN THE MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | S (even years)

This course examines the conflicts which have taken place in the Middle East since the end of the World War II. These conflicts include those between nations, cultures, and ideologies.

MEST 353 | WOMEN AND GENDER IN THE MIDDLE EAST (3-0-3)

Prerequisite: ENGL 102 | S (odd years)

This course explores traditional gender roles in Middle East society, historically and in modern times. It focuses on the lives of key female figures in Middle East history with a view to delineating societal attitudes towards women in the region up to the modern day. The course also examines the role played by religion and religious authorities in the formation and confirmation of such attitudes. In addition, the imperatives of contemporary Middle Eastern women's voices are surveyed as these manifest themselves in film, literature and other intellectual output.

MEST 380 | SOCIETY AND ECONOMICS IN THE GULF (3-0-3)

Prerequisite: ENGL 102 | Upon demand

The course analyzes the diversity, complexity and dynamism of political, social, cultural, and economic life in the Gulf region in the modern period. There will be special emphasis on processes of social change and economic development since the Independence of the six GCC countries.

MEST 381 | NORTH AFRICA: NATION, SOCIETY, AND CULTURE (3-0-3)

Prerequisite: ENGL 102 | F

This course examines the art, literature, and other aspects of culture in the nations of North Africa and how these important aspects have contributed to the shaping of those societies during various important recent historical periods.

MEST 382 | THE LEVANT: ARAB LANDS OF THE EASTERN MEDITERRANEAN (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course focuses on the area extending from the Turko-Syrian border to Syro-Palestine, encompassing also present-day Lebanon and Jordan. The region is analyzed in terms of cultural continuity and religious diversity against the background of major political events.

MEST 383 | IRAQ: REINVENTING THE NATION (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course surveys the history of the modern nation-state of Iraq in its religious, social and political dimensions. The background and long aftermath of both the Iraq-Iran War and the First Gulf War constitute some of the major focus of the course along with developments within the country since the fall of the Baath regime in 2003.

MEST 384 | EGYPT: LITERATURE SINCE 1952 (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course examines the intricate relationship which has existed in Egypt between creative writers and the state since the coup d'état of 1952. It explores the ways in which creative writers have navigated between the narrow straits of governmental restrictions and societal mores and how these writers have ultimately shaped current Egyptian culture.

MEST 475 | SPECIAL TOPICS IN MIDDLE EASTERN STUDIES (3-0-3)

Upon demand

A critical study of theory and research at a relatively advanced level related to topics in Middle Eastern studies not covered by other courses. The specific topics will be determined by interests of the students and the instructor. Students should check with the Registrar or Chair of the Department of International and Middle Eastern Studies to determine course content for a specific semester.

MGMT 201 | PRINCIPLES OF MANAGEMENT (3-0-3)

Prerequisite: BUSI 101, ENGL 102 | F, S, SI, SII

This course combines the elements of management (planning, organizing, implementing, controlling and evaluating) and applies leadership principles and characteristics to the exercise of these functions. Management and leadership as topics of study are analyzed and compared. Interpersonal skills required for effective leadership are explored. Students must receive at least a C grade in this course in order to register for additional Management Major courses.

MGMT 313 | OPERATIONS MANAGEMENT (3-0-3)

Prerequisites: MGMT 201, QUAN 201 | F, S, SI

This course provides a study of the drivers of quality, customer satisfaction, efficiency and productivity in service and manufacturing enterprises. Topics include product and service design, quality management, facility location and layout, materials management, scheduling, project management, and supply chain management.

MGMT 321 | ORGANIZATIONAL BEHAVIOR (3-0-3)

Prerequisite: a grade of C or higher in MGMT 201 | F, S, SI

Organizational behavior is the interdisciplinary field of study that investigates the impact of individuals, groups, and structure on the behavior of organizations, and how organizations manage their environments. The course covers the major theories, concepts, and tools that are employed in the field. Through the application of theoretical knowledge to exercises and case studies, students arrive at a better understanding of human behavior in the work environment.

MGMT 331 | HUMAN RESOURCE MANAGEMENT (3-0-3)

Prerequisite: a grade of C or higher in MGMT 201 | F, S, SI

This is an introduction to the principles and practice of human resource management. The role of human resources in the modern business organization will be the main focus. Students will develop proficiency in solving human resource problems through lectures and case studies. The course provides instruction that will help current and aspiring managers to better understand the human resource functions in international, as well as, in the local economies.

MGMT 341 | PROJECT MANAGEMENT (3-0-3)

Prerequisites: a grade of C or higher in MGMT 201, QUAN 201 | F, S, SI

This course draws upon the applied fields of organization behavior, management theory/science, and finance to develop a theoretical and very practical understanding of project management for students. The practical learning from this course is accomplished primarily through team-based project simulations.

MGMT 401 | INTERNATIONAL MANAGEMENT (3-0-3)

Prerequisites: a grade of C or higher in MGMT 201, MGMT 321 | F, S

Upon completion of this course, students are familiar with the globalization of markets and the economic interdependence of nations. In addition, the course develops skills that will assist students in designing, implementing and evaluating global strategies. Moreover, the socioeconomic, institutional, and structural variables underlying management practices, with a focus on human resources management in North America, Western Europe, Japan, East Asia, and the Arabian Gulf are considered.

MGMT 431 | LEADERSHIP (3-0-3)

Prerequisite: MGMT 321 | F, SI

This course aims to provide students with a basic understanding of the role of leadership in the modern organization. Topics covered include different theories and definitions of leadership, organizational goals and the leader's role, leadership vs. management, leadership traits and characteristics, leadership styles and cultural differences, transformational leadership, charismatic leadership, transactional leadership, and gender and leadership. Case studies will be used to illustrate various leadership concepts, traits and styles in action.

MGMT 451 | SUPPLY CHAIN MANAGEMENT (3-0-3)

Prerequisite: *a grade of C or higher in MGMT 201 | F*

This course examines the planning and management of the production and distribution of goods and services as an integrated process which connects suppliers, producers, retailers and the transportation system. Different components of this process are analyzed sequentially, including location choice, distribution system design, selection of suppliers and distributors, contracting issues, partnership formation, inventory policies, production plans and electronic data interchange.

MGMT 461 | MANAGING CHANGE AND INNOVATION (3-0-3)

Prerequisite: *MGMT 331, MGMT 341 | F, S, SI*

The world is a constantly changing place. Once accepted ways of doing business often fail to provide organization much needed growth. Organizations that do not successfully innovate and adapt to their new environments, grow old and weary and die. The history of business is replete with examples of once successful companies that fail and a few that managed to innovate and change. Contrary to what many think it is not the creative new idea but it is the execution of the idea that poses the biggest hurdle. It is vital and interesting to know what specific challenges successful established organizations face to execute innovative and change ideas. In this class we will focus on these challenges through our readings and analyses of several case studies.

MGMT 491 | SPECIAL TOPICS IN MANAGEMENT (3-0-3)

Prerequisite: *Senior Status or approval of the Chair | Upon demand*

This course is a critical study of theory and research related to selected topics in management. The specific topics of this course will be determined by the interests of the students and the instructor.

MGMT 499 | STRATEGIC MANAGEMENT (3-0-3)

Prerequisites: *Senior Status and completion of all Business Foundation and Core courses, and at least three required Major Electives | F, S, SI*

This course introduces students to the elements of the strategic management theory and process including environmental analysis; internal analysis and diagnosis; generic strategy alternatives; strategic choice; and implementation.

MKTG 201 | PRINCIPLES OF MARKETING (3-0-3)

Prerequisite: *BUSI 101, or VCAD 202 (for Visual Communication-Advertising students), ENGL 102 | F, S, SI, SII*

This course will expose you to the fundamentals of marketing concepts and provide insights into how these concepts are applied by practitioners in the real world. It is designed to give you an overview of basic marketing theory and to introduce you to the elements of marketing practice through topics such as buyer behavior, marketing research, developing marketing goods and services, pricing, distribution, and promotion. Students must receive at least a C grade in this course in order to register for additional Marketing Major courses.

MKTG 311 | SALES MANAGEMENT (3-0-3)

Prerequisite: *a grade of C or higher in MKTG 201 | F, S, SI*

The course is designed to equip students with a theoretical and practical understanding of effective sales management. Students will be furnished with the skills necessary to manage a sales department efficiently. Students will learn how to set selling objectives, to design marketing policies and selling strategies, to organize sales departments for firms of varying size, to coordinate a sales force, to recruit and train sales people, and to analyze markets from a sales perspective.

MKTG 321 | RETAIL MANAGEMENT (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201 | F, SI*

The course offers challenging opportunities for those who choose a management level career in the retail business area. It introduces students to the many diverse forces that exert their influence over the retail trade industry. The course covers basic concepts and methods of retail management. It also exposes students to current retail practices and various retailing career opportunities.

MKTG 361 | MARKETING RESEARCH (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201, QUAN 201 | F, S*

The course will enable students to systematically study, conduct, and evaluate marketing research activities within a firm. Students will be exposed to survey planning, questionnaire construction, interviewing, data collection, data analysis, demand analysis and forecasting, and population sampling procedures.

MKTG 371 | DIGITAL MARKETING (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201 | F, S*

The purpose of this course is to examine aspects of the evolving digital marketing environment, including topics such as digital marketing analytics, search engine optimization, website design, online user experience and social media marketing. Students will explore and learn the theories and applications behind digital marketing, which will provide them with the foundation needed for real-world professional challenges. Students will earn industry certifications during the course.

MKTG 401 | CONSUMER BEHAVIOR (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201 | F, S*

The emphasis of this course is on the descriptive and conceptual analysis of consumer buying behavior with a focus on the theory and research essential to the understanding of individual choice behavior.

MKTG 411 | SERVICES MARKETING (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201 | S*

The course will enable students to focus on the unique challenges of managing services and delivering quality service to customers. It will discuss how services are different from physical products, why they are different, and what strategies result from these differences. Students will appreciate the attraction, retention, and building of strong customer relationships through quality service and will recognize this as the foundation for a strong customer relationship management.

MKTG 421 | INTERNATIONAL MARKETING (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201 | F, S*

The course incorporates marketing concepts into the framework of the world market place and international business. Students will be exposed to key global topics such as market segmentation; international physical distribution, pricing, and product life cycle; and regulations and embargoes and their effects on international marketing strategy.

MKTG 471 | STRATEGIC MARKETING MANAGEMENT (3-0-3)

Prerequisite: *Senior Status and completion of MKTG 361 and MKTG 401 | S, SI*

The course enables students to view the marketing function of an organization from a strategic point of view. Planning, decision-making, implementation of product/price, promotion, advertising, and distribution and other management issues are discussed as they relate to market segmentation, consumer behavior and marketing communications. The course is based on case studies and product analyses.

MKTG 491 | SPECIAL TOPICS IN MARKETING (3-0-3)

Prerequisite: *grade of C or higher in MKTG 201, Senior Status or approval of the Chair | Upon demand*

This course is a critical study of theory and research related to selected topics in marketing. The interests of the students and the instructor will determine the specific topics of this course.

PHIL 105 | INTRODUCTION TO CRITICAL THINKING (3-0-3)

Prerequisite: *ENGL 101 | F, S*

This course presents formal thinking processes and the utility of critical thinking skills in different situations. Students learn to connect effective thinking, attention to detail, weighing positive and negative factors, and personal responsibility for decisions. Reading, writing, speaking and listening are emphasized throughout the course.

PHIL 201 | INTRODUCTION TO PHILOSOPHY/LOGIC (3-0-3)

Corequisite: *ENGL 102 | F, S, SI*

This course is a survey of fundamental problems in several major divisions of philosophy, such as axiology, logic, philosophy of religion, epistemology and metaphysics. This course offers an overview of the basic aims, approaches and types of issues in philosophy, while enabling students to explore the place of philosophy in the development and justification of personal values.

PHIL 222 | PROFESSIONAL ETHICS (3-0-3)

Prerequisite: ENGL 102 | F, S, SI

This course discusses professional workplace responsibility within the context of meta-ethics and applied ethics. Specific topics include professional interests of clients and employers, safety and liability, public welfare, whistleblowing, and legal obligations. It also reviews professional codes of ethics and examines case studies involving professional ethics.

PHIL 225 | ETHICS AND ARTIFICIAL INTELLIGENCE (3-0-3)

Prerequisite: ENGL 102 | S

This course addresses the ethical challenges presented by the development and implementation of artificial intelligence, and considers the implications of A.I. in areas such as society, conflict, medicine, and human rights. An analytical and innovation-oriented approach is taken toward current debates and case studies centered on the present use of A.I. in various industries and areas of everyday life.

PHIL 250 | POLITICAL PHILOSOPHY (3-0-3)

Prerequisite: ENGL 102, WLDC 201 or WLDC 202, or PHIL 201 | S

This course is a historical survey of major political thinkers from Socrates to Foucault, that is, from Classical Antiquity to the present day. The focus will be directed to key concepts and values necessary for the appraisal of political life. We will analyze, for example, the nature and scope of the State, individual rights, equality, liberty, community, property, and justice, as well as the ethical issues that are bound up with these ideas.

PHIL 260 | INTRODUCTION TO BIOETHICS (3-0-3)

Prerequisite: ENGL 102 | F, S

This course examines critical issues in bioethics from a global perspective and provides students with a grounding in ethical theory for solving bioethical dilemmas. The course emphasizes critical thinking, ethical reasoning, and the analysis of case studies from diverse cultural viewpoints. The course prepares students to navigate today's complex bioethical landscape.

PHIL 310 | ETHICS AND MORAL PHILOSOPHY (3-0-3)

Prerequisite: PHIL 201 | Upon demand

This course offers an introduction to the history of moral philosophy and an exploration of contemporary ethical debates. Through the reading of various foundational texts, both ancient and modern, this course provides an overview of the basic aims, approaches, and types of moral reasoning. Emphasis is on placing debates within a global context and encouraging students to develop their own philosophical perspectives.

PHIL 320 | METAPHYSICS AND THE STUDY OF HUMAN EXISTENCE (3-0-3)

Prerequisite: PHIL 201 | Upon demand

This course provides the study of human existence through metaphysics – the branch of philosophy concerned with questioning “What is real?” Through the reading of foundational texts, both ancient and modern, this course offers a detailed assessment of the history and development of metaphysical inquiry and its relevance to significant, contemporary philosophical questions. Emphasis is on placing significant philosophical questions in a broad human context and encouraging students to develop their own philosophical perspectives.

PHYS 201 | INTRODUCTORY PHYSICS I W/LAB (3-3-4)

Corequisite: MATH 205 or MATH 210 | F, S, SI

Motion in two and three dimensions, Newton's laws, concepts of energy and potential, rotation, Gravitational fields, statics, fluid dynamics and thermodynamics.

PHYS 202 | INTRODUCTORY PHYSICS II W/LAB (3-3-4)

Prerequisites: PHYS 201, MATH 210 | F, S, SI

Mechanical waves, electrostatics and electrodynamics, fundamentals of electromagnetics, DC and AC circuits, properties of light including interference and diffraction.

POLS 200 | INTRODUCTION TO POLITICAL SCIENCE (3-0-3)

Prerequisite: ENGL 102 | F

Political science is the scientific study of the institutions, forms of thought and organization, and political actors. Encompassing both theoretical and empirical perspectives, the course provides the methodological tools necessary for

describing forms of government, political action, and the objectives and efficacy of political processes. The course also introduces students to basic theories of political ideologies and research methods.

POLS 201 | COMPARATIVE POLITICAL SYSTEMS (3-0-3)

Prerequisite: POLS 200 | F (even years)

Comparative Politics is a systematic study of the differences and similarities between political institutions and government across the globe. This course introduces students to a variety of theories and methodologies used in scholarly efforts to better understand the origins and effects of democratic and non-democratic political systems. Students compare and contrast various political systems in different regions while assessing their impacts on society and economy.

POLS 210 | INTRODUCTION TO INTERNATIONAL RELATIONS (3-0-3)

Prerequisite: ENGL 102 | S

This course is an introduction to the study of global issues in the international relations. The course covers key theories and concepts in IR to help students better understand contemporary challenges and debates in global politics. While drawing on recent historical trends and events, students gain the necessary tools to examine and analyze global actors and their interactions in a variety of issue areas, including, trade, finance, human rights, and environment.

POLS 325 | INTERNATIONAL ORGANIZATIONS (3-0-3)

Prerequisite: POLS 200 | Upon demand

This course introduces students to the roles various international organizations play in the overall attempts to address various global issues. The first half of the course is dedicated to intergovernmental organizations (IGOs); the second half focuses on non-governmental organizations (NGOs). Discussions revolve around organizations which target similar global issues.

POLS 330 | FOREIGN POLICY (3-0-3)

Prerequisites: POLS 210 | Upon demand

This course introduces students to Foreign Policy Analysis (FPA), a subfield of International Relations that focuses on governments' decision-making processes and implementation. Students learn the history and evolution of FPA, examine some of its most important findings, and practice applying it in historical case studies and current affairs.

POLS 340 | INTERNATIONAL DIPLOMACY (3-0-3)

Prerequisites: POLS 210 | F

This course offers an overview of the historical evolution and practice of contemporary diplomacy. Students analyze the activities of a modern diplomat within a wider historical and theoretical context. The course covers the functions of modern diplomacy as well as the techniques of international negotiation by using historical and contemporary examples.

POLS 350 | POLITICAL VIOLENCE: A HISTORICAL PERSPECTIVE (3-0-3)

Prerequisite: ENGL 102 | S

The course provides a theoretical, conceptual, and historical framework that enables students to understand the evolution of the phenomenon of political violence and how it functions. The course addresses the questions of definition of terrorism, history of the concept, perspectives on causes, structure and organization of terrorist groups, in relation to the debate on the changing face of contemporary conflicts, emerging groups and the consequences of political violence. The approach seeks to differentiate between different forms of terrorism in relation to the political and societal contexts from which they originate and the differing domestic, regional, and international responses they generate.

POLS 401 | CONTEMPORARY POLITICAL ISSUES (3-0-3)

Prerequisites: POLS 200 | SI

In this seminar-style course, students explore current issues in politics. In addition, all students are expected to look at the historical, economic, and cultural factors involved. The course is designed to allow students to explore a primary area of interest while maintaining the interrelationships of all major areas of the BAIS degree. This course is also open to non-BAIS students.

POLS 415 | GEOPOLITICS (3-0-3)

Prerequisites: *POLS 210 | Upon demand*

Geopolitics analyzes the relationship between geography (location, size, natural resources, demographics, activities, etc.), and the political tensions that crystallize on a given space. Cases will be presented to introduce the prevalent thinking processes and how they apply to contemporary conditions.

PSPK 101 | PUBLIC SPEAKING IN MULTICULTURAL CONTEXTS (3-0-3)

Corequisite: *ENGL 101 | F, S, SI, SII*

This course develops students' critical thinking and rhetorical skills for academic and professional communication. Through a blend of analytical and practical exercises, students learn to craft effective and engaging extemporaneous oral presentations. Emphasis is placed on how cultural contexts shape communication, how strategic rhetoric enhances persuasiveness, and how audience awareness fosters meaningful engagement within multicultural contexts.

PSYC 201 | GENERAL PSYCHOLOGY (3-0-3)

Corequisite: *ENGL 101 | F, S, SI*

This course is designed to introduce students to the various theories and contributions in the field of psychology. It includes the topics of learning, memory, language development, perception, theories of emotion, personality theory, child development and social psychology.

PSYC 205 | RESEARCH METHODS IN PSYCHOLOGY (3-0-3)

Prerequisites: *PSYC 201, MATH 101 | F, S*

This course introduces students to quantitative and qualitative research methods in psychology, with a focus on quantitative methods. At the end of this course, students should be able to design and implement psychological studies using a wide range of methodologies and analytic strategies.

PSYC 210 | ABNORMAL PSYCHOLOGY (3-0-3)

Prerequisite: *PSYC 201 | S*

This course provides an overview of abnormal psychology from a number of perspectives (biological, behavioral, and social). At the end of this course, students should be able to identify the origins, symptoms, and treatments for a wide range of psychological disorders, including but not limited to anxiety disorders, mood disorders, psychotic disorders, personality disorders, neurodevelopmental disorders, and eating disorders. Students should also understand the importance of developing and maintaining empathy towards individuals who may suffer from psychological disorders.

PSYC 215 | DEVELOPMENTAL PSYCHOLOGY (3-0-3)

Prerequisite: *PSYC 201 | S*

This course focuses on individual development from the prenatal period through late adulthood, from a number of perspectives (biological, cognitive, and psychosocial). At the end of this course, students should be able to understand theories of human development, including hereditary and environmental influences, during the prenatal, early childhood, middle childhood, adolescent, emerging adult, adult, and late adult stages of development.

PSYC 220 | PRINCIPLES OF LEARNING (3-0-3)

Prerequisite: *PSYC 201 | S, Upon demand*

This course focuses on the basic principles of learning. At the end of this course, students should be able to understand associative (i.e., classical and operant conditioning) and observational learning. Students will have the opportunity to train a virtual rat using the processes of classical and operant conditioning.

PSYC 230 | COGNITIVE PSYCHOLOGY (3-0-3)

Prerequisite: *PSYC 201, BIOL 201 or SCIE 201 | Upon demand*

This course focuses on the scientific study of how people think and process information. At the end of this course, students should be able to understand the mental processes that underlie human abilities including perception, attention, consciousness, memory, learning, problem solving, decision making and language.

PSYC 231 | SENSATION AND PERCEPTION (3-0-3)

Prerequisites: *PSYC 201, BIOL 201 or SCIE 201 | S*

In this course, students will use the major theoretical perspectives to examine how humans sense and perceive the world around them. At the end of this course, students should be able to understand vision, sound, and perceiving objects and scenes.

PSYC 232 | PSYCHOLOGY OF ADDICTIVE BEHAVIOR (3-0-3)

Prerequisites: PSYC 201, BIOL 201 or SCIE 201 | S

This course introduces students to the different theoretical frameworks that explain addictive behaviors, as well as different treatment options and prevention models. At the end of this course, students should be able to understand how addiction affects physical health, emotional well-being, occupational functioning, and interpersonal relationships.

PSYC 305 | STATISTICS FOR PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 205 | F

This course introduces the main descriptive and inferential statistics used in psychology research. At the end of this course, students should be able to select, run, and analyze the appropriate statistical procedure for their research question.

PSYC 313 | SOCIAL PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 201 | F

This course is intended to introduce the students to the basic concepts and topics in the field of social psychology. Topics in this course include the social self, attitudes and persuasion, attribution theory, groups, pro-social behavior and altruism, attraction, nonverbal communication, aggression, prejudice and discrimination, the impact of the environment on behavior, social psychology, and the legal system and social psychology of health.

PSYC 315 | PERSONALITY PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 201 | F

This course introduces students to personality psychology's major theoretical and empirical findings. Students will learn about different theories of personality (physiological, evolutionary, and psychoanalytical), the major personality traits, factors that influence personality (genetics, culture, and social relations), how personality develops, how to assess personality, and the nature and causes of personality disorders.

PSYC 318 | CRIMINAL PSYCHOLOGY (3-0-3)

Prerequisites: PSYC 220 | F, S

This course examines psychological factors that contribute to criminal behavior and techniques used in criminal profiling. It examines the mental health challenges faced by offenders, the environmental factors that influence criminal behavior, and various forensic assessment methods. Topics also include crime prevention strategies, offender rehabilitation methods, and ethical considerations in criminology.

PSYC 360 | CONSUMER PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 305 | S

This course introduces the main concepts, theories, and findings in consumer psychology. At the end of this course, students should be able to understand the attitudes, motivations, and perceptual processes of consumers.

PSYC 365 | INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY (3-0-3)

Prerequisite: Junior Status | F

This course introduces the main concepts, theories, and findings in industrial/organizational psychology. At the end of this course, students should be able to understand the employee selection process, employees' attitudes and motivation, as well as leadership and conflict management.

PSYC 366 | POSITIVE ORGANIZATIONAL PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 205 | F, S

This course examines the theories, research, and practical applications of positive organizational psychology. Students will explore real-world workplace scenarios to develop a deeper understanding of how positive psychology enhances organizational effectiveness. Topics include the foundations of positive and organizational psychology, methods for measuring and evaluating well-being, the HERO model (Hope, Efficacy, Resilience, Optimism), work engagement, positive leadership, and strategies for fostering high-quality relationships at work.

PSYC 367 | HEALTH PSYCHOLOGY (3-0-3)

Prerequisite: PSYC 215 | S

This course examines the application of psychological theories to lifestyle and behavioral factors that influence physical and mental health. It explores the role of psychological variables in preventing and managing medical conditions such as cancer, cardiovascular disease, diabetes, and chronic pain. Emphasis is placed on evidence-based strategies for promoting good health and supporting treatment outcomes.

PSYC 398 | PSYCHOLOGY INTERNSHIP (0-15-3)

Prerequisite: *Senior Status and approval of the Dean | S, and Upon demand*

With the aid of a supervising instructor and under the direct supervision of a member of the host organization, students participate in a practical onsite internship in which theoretical psychological principles are applied to “real world” situations.

PSYC 401 | SELECTED TOPICS IN PSYCHOLOGY (3-0-3)

Prerequisites: *ENGL 102, Junior Status | S*

This seminar-style course asks students to explore current issues in psychology. In addition, students are expected to look at the biological, psychological, social, and cultural factors involved.

PSYC 411 | CLINICAL PSYCHOLOGY (3-0-3)

Prerequisites: *PSYC 305, Junior Status | F*

This course introduces students to research and practice in clinical psychology. At the end of this course, students should be able to understand the process of diagnosing, classifying, and treating psychological problems.

PSYC 412 | PSYCHOLOGICAL TESTING AND ASSESSMENT (3-0-3)

Prerequisites: *PSYC 305, Junior Status | Upon demand*

This course introduces students to psychological testing and assessment. At the end of this course, students should be able to evaluate, use, and create psychological tests.

PSYC 413 | FAMILY PSYCHOLOGY (3-0-3)

Prerequisites: *PSYC 305, Junior Status | S*

This course introduces student to family patterns and processes. At the end of this course, students should be able to understand theories related to families and systems, parent-child relationships, and parenting practices across culture.

PSYC 415 | PSYCHOLOGY OF ADVERTISING AND MASS MEDIA (3-0-3)

Prerequisites: *ENGL 102, PSYC 201 | S*

This course examines the role of mass media and the effects of advertising in issues of sex roles, sexual attitudes and violence. Emphasis is placed on behavioral, psychological, and physiological reactions to advertising and media exposure, and on the acquisition of imitative response.

PSYC 440 | ETHICS IN PSYCHOLOGY: RESEARCH AND PRACTICE (3-0-3)

Prerequisite: *Junior Status | F*

This course introduces ethical decision-making in psychology research and practice. At the end of this course, students should be able to identify ethical dilemmas and suggest courses of action for addressing them.

PSYC 450 | HISTORY AND SYSTEMS OF PSYCHOLOGY (3-0-3)

Prerequisite: *Junior Status | F*

This course provides an overview of the history of psychology and its major systems. At the end of this course, students should be able to understand how the development of psychology as a science was affected by various factors such as other disciplines and sociocultural changes.

PSYC 498 | THESIS I (3-0-3)

Prerequisite: *Senior Status | F*

This course requires students to draw on the research skills and theoretical frameworks taught in the program to plan, develop, and write a research proposal for the senior thesis project. The proposal is an integral part of the thesis and must be approved prior to enrolling in Thesis II.

PSYC 499 | THESIS II (3-0-3)

Prerequisite: *PSYC 498 | S*

This course requires students to build on the proposal developed in Thesis I to compose and orally defend a final thesis project. The thesis will demonstrate advanced research skills and the ability to apply a clear theoretical framework to a contemporary psychological issue.

QUAN 201 | INTRODUCTION TO BUSINESS STATISTICS (3-0-3)

Prerequisite: *MATH 200 | F, S, SI, SII*

This foundation course in descriptive and inferential statistics is inclusive of probability, discrete and continuous distributions, correlation and linear regression, confidence intervals and hypothesis testing.

QUAN 301 | QUANTITATIVE METHODS FOR DECISION-MAKING (3-0-3)

Prerequisite: *QUAN 201 | F, S, SI*

This is an advanced course in the quantitative techniques used in managerial decisions. Building upon foundation coursework in statistics, students participate in advanced applications of deterministic and probabilistic models of decision theory, linear programming, simulation, and dynamic programming.

QUAN 350 | QUANTITATIVE METHODS FOR COMPUTATIONAL PROBLEM DECISION-MAKING (3-0-3)

Prerequisite: *QUAN 301 | S*

This course focuses on quantitative methods and computational tools to support decision-making in business. Students will learn various optimization, simulation, and statistical techniques to model and solve complex business problems. The course covers linear programming, Monte Carlo simulations, decision trees, and risk analysis. By the end of the course, students will be able to build and analyze computational models to solve business problems, assess risks, and support strategic decisions. The course combines theoretical understanding with practical applications, including hands-on exercises and a comprehensive final project that emphasizes the use of quantitative methods in real-world business scenarios.

SCIE 201 | LIFE SCIENCES FOR TODAY (3-0-3)

Corequisite: *ENGL 101 (students will not receive credit for both SCIE 201 and BIOL 201) | F, S, SI*

This course introduces students to basics of life sciences including topics that address health and disease, the diversity of life on Earth, and the environment. The course covers core concepts and recent developments in life sciences, such as cellular, molecular and biochemical concepts in health and disease, the scientific method of discovery, scientific innovations, biodiversity and sustainability.

SCIE 211 | WATER SUSTAINABILITY (3-0-3)

Prerequisite: *ENGL 101, MATH 090 or MATH 095 | Upon demand*

This course presents an overview of water sustainability by highlighting the importance of water in sustaining life, biodiversity, human health and development. Students will evaluate scientific, technical and socio-economic solutions to sustainably manage global water supplies.

SCIE 241 | PRINCIPLES OF HUMAN NUTRITION (3-0-3)

F, S, SI

The course provides an overview of complete nutritional requirements needed by humans for the maintenance of good health throughout life and in the prevention of disease. Topics discussed will include dietary sources, nutritional guidelines, food labeling, weight management, and the role of evidence-based science, culture, education and media in dietary choices, practices and policies.

SCIE 242 | WOMEN'S HEALTH (3-0-3)

Corequisite: *ENGL 101 | F, S, SI*

This course examines global topics in women's health emphasizing the physiological, behavioral, social, economic, environmental, and political factors associated with women's health and survival. The course reviews the physiological uniqueness of women and examines mechanisms, practices, and solutions to improving women's health care.

SCIE 251 | ENVIRONMENTAL HEALTH AND SUSTAINABILITY (3-0-3)

Corequisite: *ENGL 101 | F, S*

This course focuses on environmental exposures, and their effects on the environment and human health. Students examine topics reflecting upon the importance of environmental protection from hazardous wastes, food sustainability, pests and pesticides, air quality, water quality, industrial contaminants, and radiation. Students develop an understanding of the connection between environmental protection, sustainability and human health.

SCIE 275 | SELECTED TOPICS IN NATURAL SCIENCES (3-0-3)

Upon demand

Topics in the natural sciences which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

SCIE 311 | PRINCIPLES OF ENVIRONMENTAL SCIENCES (3-0-3)

Prerequisite: BIOL 201, BIOL 202, SCIE 201 or SCIE 211, ENGL 101, MATH 101 or higher | F, and Upon demand

This course is designed to introduce students to the basic principles of environmental sciences. The course will cover important environmental themes such as biodiversity, environmental conservation, population issues, pollution, waste management strategies, and sustainable development. Students will have an opportunity to examine contemporary environmental issues and international environmental policies which directly impact their lives.

SCIE 341 | PUBLIC HEALTH (3-0-3)

Prerequisite: ENGL 101, MATH 101 or higher | Upon demand

This course introduces public health as an interdisciplinary science concerned with topics central to the health of populations and their physical, mental, and social well-being. The course focuses on current pertinent public health problems, assessing causation and examining intervention and management strategies from personal, social, and organizational levels.

SCIE 351 | HEALTH TECHNOLOGY AND INNOVATION IN THE 21ST CENTURY (3-0-3)

Prerequisites: ENGL 102 and any one of the following: BIOL 201, SCIE 201, SCIE 241, SCIE 242, SCIE 341 | F, and Upon demand

This course introduces students to the latest advances and applications in health technology used by patients and healthcare providers alike, to improve human health and survival. It examines health, societal and ethical impacts of such medical advances and technologies, and highlights the need for continued innovation in healthcare delivery.

SCIE 475 | SPECIAL TOPICS IN NATURAL SCIENCES (3-0-3)

Upon demand

Advanced topics in the natural sciences which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

SOCI 201 | INTRODUCTION TO SOCIOLOGY (3-0-3)

Corequisite: ENGL 101 | F, S, SI

This introductory course to sociology provides students with an understanding of how individuals within various societies interact both as individuals and as members of various groups within those societies. The course examines what motivates individuals to form and belong to groups, and how those groups affect change within a given society. The course also examines unequal power relationships between different groups in a given society.

SOCI 301 | GLOBALIZATION (3-0-3)

Prerequisite: SOCI 201 and Junior Status | S

This course provides students with analytical skills to apply sociological inquiry to examine the phenomena associated with globalization. The course focuses on the transformation of the economic, social and political relations and networks within and between the nations since the age of colonialism. Focusing on the most recent trends in the world, this course covers issues such as global inequalities, dispossession, labor exploitation, forced migrations, militarization, social movements, urban growth, and ecological crises.

SOCI 332 | CULTURE AND SOCIETY IN SOUTH ASIA (3-0-3)

Prerequisite: ENGL 102 | Upon demand

The course introduces students to the core topics in the culture and society of South Asia, including caste, agrarian relations, kinship, and religion. Students examine classic and contemporary ethnographies, as well as salient issues such as gender and modernity.

SOCI 340 | TECHNOLOGY AND SOCIETY (3-0-3)

Prerequisite: ENGL 102, SOCI 201 | *Upon demand*

This course examines the complex nature of the relationship between technological advancements and the societies in which those advancements take place. The primary focus of the course will be the technological advancements which have taken place between the middle of the 20th century and the present day. Discussion will focus on the societal effects of the most recent technological developments. Among other areas, the course focuses on significant technological advancements in the fields of energy, health, war, the environment, and communication.

SOCI 344 | GENDER AND SOCIETY (3-0-3)

Prerequisite: ENGL 102, SOCI 201 | *Upon demand*

This course examines the ways in which various societies and cultures within those societies influence the gender roles of their members. Course discussion involves how concepts of 'masculinity' and 'femininity' are determined. Gender stereotypes, differences and similarities, limitations, and their impact on areas of culture are also explored.

SOCI 350 | SOCIOLOGY OF VIOLENCE (3-0-3)

Prerequisite: ENGL 102 | *S*

This course introduces students to the theoretical and conceptual tools to identify, define, explain and evaluate various forms of organized violence. The course explores the most acclaimed scholarly debates on violence, which is a controversial aspect of social, cultural, economic and political organization in our societies.

SPAN 101 | ELEMENTARY SPANISH I (4-1-4)

F, S, SI

Long recognized for its cultural significance, the Spanish language continues to grow in importance in the design and business communities. This course provides students with oral and written approaches to beginning Spanish grammar skills. Individual daily work with language tapes is an essential part of the program.

SPAN 102 | ELEMENTARY SPANISH II (4-1-4)

Prerequisite: SPAN 101 or equivalent | *F, S, SI*

This course is a continuation of Spanish 101, with expansion of vocabulary and possibilities of expression.

SPAN 201 | INTERMEDIATE SPANISH I (4-1-4)

Prerequisite: SPAN 102 or equivalent | *F and Upon demand*

This course continues the development of Spanish language and culture from SPAN 102, using an oral and written approach to advance Spanish grammar and conversation, with emphasis on communication skills.

SPAN 202 | INTERMEDIATE SPANISH II (4-1-4)

Prerequisite: SPAN 201 or equivalent | *S and Upon demand*

This is a continuation of SPAN 201, featuring practice in speaking, reading and writing with emphasis on cultural and literary readings, composition and grammar review. This completes the sequence of four language courses where the aim continues toward a higher level of language acquisition to maximize each student's language skills.

SSCI 275 | SELECTED TOPICS IN SOCIAL SCIENCES (3-0-3)

Upon demand

Topics in the social sciences which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

SSCI 475 | SPECIAL TOPICS IN SOCIAL SCIENCES (3-0-3)

Upon demand

Advanced topics in the social sciences which are not covered by other course offerings. The specific topics will be determined by student/instructor interest. Students should check with the Registrar or Dean of Arts and Sciences to determine course content for a specific semester.

UNIV 100 | THE UNIVERSITY EXPERIENCE (1-0-0)

F, S, SI

This course is designed to give students an understanding of how a modern American university functions, their role as students at the university, and the most important skills involved in successfully fulfilling that role. These skills include critical thinking, problem solving, time management and communication. Students are introduced to many of the skills and philosophies needed in their academic journey at AUD.

VCAD 251 | VISUALIZATION IN ADVERTISING (1-4-3)

Prerequisite: VCCC 205 | S

This course explores the significance of the image in the process of message delivery and communication. Students learn about visualization while generating creative communication designs.

VCAD 301 | TYPOGRAPHY IN ADVERTISING (1-4-3)

Prerequisite: VCAD 251, **Corequisite:** VCAD 302 | F

This course explores typography and the significance of typefaces in the process of message delivery and communication. Students learn and apply the basic principles and practices in typography while generating creative communication designs.

VCAD 302 | LAYOUT IN ADVERTISING (1-4-3)

Prerequisite: VCAD 251, **Corequisite:** VCAD 301 | F

This course provides a general overview on the basic principles and practices in layout design. Across a variety of media, students design and employ effective layout grids that best deliver the message and the brand's image.

VCAD 351 | COPYWRITING IN ADVERTISING (1-4-3)

Prerequisite: AIMC 201 | S

This course provides the student with a solid background in developing and writing strategic and persuasive messages for multimedia Advertising and Integrated Marketing Communications (IMC).

VCAD 352 | EXECUTION, PRODUCTION AND PRESENTATION (1-4-3)

Prerequisite: VCAD 302, **Corequisite:** VCAD 351 | S

Students execute, produce and present campaigns that answer a creative brief. Students operate as typical creative teams, liaising with stakeholders and producing creative communications across varied media, from conception through production stages.

VCAD 353 | IMC CREATIVE CONCEPTION (1-4-3)

Prerequisite: AIMC 201 | S

This course joins the conception process with creative execution practices within Advertising and the IMC. Students must evaluate existing brand strategies and executions. They also generate concrete creative solutions across various disciplines.

VCAD 451 | ALTERNATIVE ADVERTISING (1-4-3)

Prerequisite: VCAD 353 | *Upon Demand*

This course explores alternative solutions in Advertising and Integrated Marketing Communication. Students learn to seize attention, when least expected, until the message is delivered.

VCAD 452 | IMC AND INTERNATIONAL ADVERTISING (3-0-3)

Prerequisite: VCAD 353 | *Upon Demand*

This advanced course examines the global marketplace and the factors influencing decisions in Integrated Marketing Communication, and more specifically, in Advertising. These decisions cover strategy, media selection and execution.

VCAD 453 | ARABIC COPYWRITING (1-4-3)

Prerequisite: VCAD 351 | *Upon Demand*

This course explores the significance of Arabic copywriting for Advertising within the region. Students learn to target the Arab consumer at the concept development stage, delivering effective Arabic copy based on a genuine Arabic approach.

VCAD 454 | ADVANCED COPYWRITING (1-4-3)

Prerequisite: VCAD 351 | *Upon Demand*

This course builds upon the Copywriting in Advertising course. Students continue to learn about the practices of copywriting and produce effective copy for multimedia Advertising and Integrated Marketing Communications (IMC).

VCCC 100 | INTRODUCTION TO VISUAL COMMUNICATION (3-0-3)

| F, S, SI

This course introduces basic concepts of visual communication in a general historical framework. Emphasis is placed on reading and writing about art and creative design process to give incoming students sufficient preparation for the program.

VCCC 101 | BASIC PRINCIPLES OF 2D DESIGN (1-4-3)

Corequisite: VCCC 100 or GAME 120 | F, S, SI

This foundation course introduces the elements and principles of two-dimensional art and design. In addition to learning basic skills of craftsmanship and visual problem solving, students develop their vocabulary and conceptualization abilities through class projects, critiques, presentations, as well as reading and writing assignments.

VCCC 102 | BASIC PRINCIPLES OF 3D DESIGN (1-4-3)

Prerequisite: VCCC 100 | F, S, SI

This foundation level course introduces students to the fundamental principles and practices of three-dimensional design. Students learn to manipulate scale, mass, plane, line, and volume for communicative and expressive ends using a variety of media.

VCCC 104 | FREEHAND DRAWING I (1-4-3)

Corequisite: VCCC 100 | F, S, SI

This foundation course introduces the techniques and perceptual skills of drawing. The student practices line, volume, tone, texture, perspective and composition through a series of exercises that will develop in complexity as the student's perceptual abilities grow and strengthen. Regular readings, discussions and critiques expand the student's art vocabulary.

VCCC 105 | COMPUTER GRAPHICS I (1-4-3)

F, S, SI

Through lecture, demonstration and practical experience this course covers the basics of industry standard design, layout, and image editing programs, as well as typical input and output options. Special focus is placed on developing competency with the technical aspects of each software application, their uses and file formats.

VCCC 204 | FREEHAND DRAWING II (1-4-3)

Prerequisite: VCCC 104 | F, S

This course is a continuation of Freehand Drawing I. Deeper exploration of composition, value, and conceptualization is emphasized as well as alternative drawing techniques and the use of color. Students study the human figure, gesture drawing, and the traditions of drawing throughout history. Through regular readings, discussions, and critiques, students consider drawing as an expressive medium on its own.

VCCC 205 | COMPUTER GRAPHICS II (1-4-3)

Prerequisite: Grade of C or higher in VCCC 105 | F, S

This course is designed to further the student's technical ability with design, layout and image editing programs. Emphasis is placed on preparing the student for professional technical competency with industry standard graphics software applications. Additional input and output options, and typical graphics applications workflows are covered.

VCCC 350 | COMMUNITY SERVICE WORKSHOP (1-4-3)

Prerequisites: Junior Status, approval of the Chair | Upon Demand

This class is an actual functioning design studio. The students will work on in-house and real life projects for community groups, charity groups and non-profit organizations. The class gives the student practical experience and published portfolio pieces.

VCCC 399 | SELECTED TOPICS IN VISUAL COMMUNICATION (1-4-3)

Prerequisites: Junior Status, approval of the Chair | Upon Demand

Topics at an intermediate level in a Visual Communication discipline not covered by other course offerings. The specific topic is determined by instructor interest and student demand. Prior approval of the course material and syllabus by the Visual Communication Chair is required.

VCCC 480 | SENIOR PROJECT (1-4-3)

Prerequisites: *Senior Status | F, S*

A senior capstone course consisting of one, semester-long comprehensive project, and designed to evaluate the student's ability to perform at a professional level. The individual project utilizes all of the skills students have learned throughout their education in the program. Students meet in both group and individual sessions with the instructor to develop and execute their projects.

VCCC 485 | BUSINESS PRACTICES AND FINAL PORTFOLIO (1-4-3)

Prerequisites: *Senior Status | F, S*

This capstone course examines career planning methods and entry level industry expectations. Students learn and work to present themselves, their skills and their work in a creative, professional manner, Visual identities, portfolios and collaterals are then evaluated by leading professionals.

VCCC 490 | VISUAL COMMUNICATION INTERNSHIP (0-16-3)

Prerequisites: *Senior Status, approval of the Chair | F, S, SI Upon demand*

Course Description: Students gain experience by applying their academic knowledge to responsible roles outside the university context; a minimum of 250 hours are required at a reputed business relevant to their academic major, under the supervision of the course instructor. Interns will experience professional teamwork, complete set tasks, create adequate solutions, and contribute to the overall creative work process, gaining clearer insight about their profession.

VCCC 499 | SPECIAL TOPICS IN VISUAL COMMUNICATION (1-4-3)

Prerequisites: *Junior Status, approval of the Chair | Upon Demand*

Topics at an advanced level in a Visual Communication discipline not covered by other course offerings. The specific topic is determined by instructor interest and student demand. Prior approval of the course material and syllabus by the Visual Communication Chair is required.

VCDM 201 | FUNDAMENTALS OF WEB DESIGN (1-4-3)

Prerequisite: *VCCC 205 | F, S*

This course introduces basic concepts, issues and techniques related to designing and developing web sites. Students learn about design specifically for the Web: image processing, navigation, and information architecture. Students will learn how to create web sites manually and with the use of popular web design software.

VCDM 202 | ONLINE MEDIA PRODUCTION (1-4-3)

F

In this practicum digital course, students will form an interdisciplinary team to produce online media content distributed on the latest digital platforms. Students will have the opportunity to specialize in digital production fields of interest to them.

VCDM 210 | COMPUTER ANIMATION I (1-4-3)

Prerequisite: *VCCC 205 | F*

This course introduces the basic processes and knowledge necessary to create computer 3D modeling and animation. Students learn the basics of modeling and animating in a digital 3D environment. Students are introduced to different workflows for the creation of low- and high polygon count projects. Students build confidence and competence working on smaller projects in this course.

VCDM 221 | INTRODUCTION TO VIDEO PRODUCTION (1-4-3)

Prerequisite: *VCCC 105 | F*

This course functions as an introduction to digital video production. Students learn to use current software, techniques and equipment, while also considering sound and sequencing their moving images when developing video projects. Students gain a beginning understanding of the history of video.

VCDM 222 | INTRODUCTION TO SOUND (1-4-3)

Prerequisite: *VCCC 205 | F*

This course functions as an introduction to sound design. Students learn the basic principles of acoustics, sound recording and production as well as an understanding of theories and history of sound design. Through projects, students explore aspects of sound design for a wide range of media.

VCDM 230 | INTRODUCTION TO INTERACTIVE MEDIA (I-4-3)

Prerequisite: VCCC 205 | S

Introduction to Interactive Media introduces current interactive software and hardware while providing experience developing multimedia materials containing sound, graphics, animation, and interactive components. Students gain hands-on experience through a series of practical skills building tasks.

VCDM 250 | MOTION GRAPHICS I (I-4-3)

Prerequisite: VCCC 205 | *Upon demand*

This class focusses on the art, the principles and the workflows of motion graphics. Students will learn to transform static graphic elements (vector and pixel graphics), typography and 3D CG elements into time-based media. They will develop a vocabulary relevant to the field through project work, class critiques and presentation. Students will develop skills in motion based graphic design and craftsmanship in handling the relevant technology aiming to solve visual problems.

VCDM 301 | DESIGN CONCEPTS FOR THE WEB (I-4-3)

Prerequisite: VCDM 201 | S

Students apply the fundamental design concepts covered in VCDM 201 to build complete web sites. Focus is on the far-reaching potential of the Web as a space for both artistic and commercial practice. Additionally, students gain a strong understanding of the social and cultural contexts of the Web.

VCDM 310 | COMPUTER ANIMATION II (I-4-3)

Prerequisite: VCDM 210 | S

This is a project-based course creating content for a digital, 3D environment. Students pursue their own vision to develop complete 3D worlds. More advanced processes and workflows are introduced for the creation of 3D models and animation. Different types of outputs are encouraged: for the web, film-oriented, or 2D and 3D printed output.

VCDM 321 | INTERMEDIATE PROJECTS IN VIDEO (I-4-3)

Prerequisite: VCDM 221 or COMM 230 | S

This intermediate class provides students opportunity to experiment with the many possibilities of video production. Through projects, screenings and readings, students explore video as an expressive medium. Students also gain a strong understanding of the cultural context of video.

VCDM 322 | ADVANCED SOUND DESIGN STUDIO (I-4-3)

Prerequisite: VCDM 222 or COMM 230 | *Upon Demand*

Students experiment with sound design techniques and technologies. Projects explore the ideas of sound aesthetics and emotive influence while allowing for experimentation in execution and installation. Students gain a strong understanding of the cultural context of sound design.

VCDM 330 | ADVANCED PROJECTS IN INTERACTIVE MEDIA (I-4-3)

Prerequisite: VCDM 230 | F

An advanced course designed to explore sound interface, spatial design and interactivity. Students explore strategies of interactivity with an emphasis on innovative ways to conceptualize and design interactive projects. Students gain a strong understanding of the cultural context of interactive media.

VCDM 350 | MOTION GRAPHICS II (I-4-3)

Prerequisite: VCDM 250 | *Upon demand*

This class focusses on the art, the principles and the workflows of motion graphics at an advanced level. Students will develop an understanding of how to transform complex ideas into graphic time-based media. They will also develop an enhanced vocabulary relevant to the field through project work, class critiques and presentation. Students will develop skills in motion-based graphic design and craftsmanship in handling the relevant technology aiming to solve visual problems.

VCDM 410 | COMPUTER ANIMATION III (I-4-3)

Prerequisite: VCDM 310 | *Upon Demand*

Students work independently on larger-scale, semester-long animation projects of their own choosing. Students are encouraged to develop experimental, mixed-media outputs for their animations. Professional animators visit to critique student work in progress at key stages of the production.

VCDM 421 | ADVANCED VIDEO PRODUCTION (1-4-3)

Prerequisite: VCDM 321 | Upon Demand

This is an advanced video class in which the student works independently on self-defined projects. Students will work with the technical and experimental foundation of previous courses in order to create advanced-level video projects. Off campus presentations of projects is expected.

VCGD 251 | TYPOGRAPHY I (1-4-3)

Corequisites: ARTS 201, VCCC 204, VCCC 205 | F

Developing sensitivity for different kinds of lettering and typographic forms is an essential foundation for all graphic designers. This course explains the history and methodology of the Latin alphabet, its construction, historical classifications and styles in practical terms. An emphasis is put on the composition of single page layouts using various texts. Students must receive at least a C grade in this course in order to register for additional Graphic Design courses.

VCGD 256 | GRAPHIC DESIGN I (1-4-3)

Prerequisite: VCGD 251, **Corequisites:** VCGD 300 | S

This course familiarizes students with basic visual language and the process of graphic design as applied to the various specializations and design applications. Students learn to enhance meaning and develop concepts through research, sketching, visual editing, creating compositions and various other design processes.

VCGD 300 | HISTORY OF GRAPHIC DESIGN (3-0-3)

S

This course traces the events and achievements that have shaped graphic design from its beginnings to the present day. The course is taught through a series of lectures and assigned research projects. Students learn to analyze innovative concepts, methods and technologies used throughout the history of graphic design.

VCGD 351 | TYPOGRAPHY II (1-4-3)

Prerequisite: VCGD 251, **Corequisites:** VCGD 256, VCGD 300 | S

This course introduces students to the various historical and technical developments of type design during the 20th century. By examining various design publications and completing a series of projects, students gain an understanding of style and design detail both in relation to cultural/art contexts and technical possibilities. Students explore typographic structure and composition.

VCGD 353 | PRODUCTION DESIGN (1-4-3)

Prerequisite: VCGD 256 | F

In this course, students are guided through the various production processes used in graphic design. Understanding both manual and computer-aided procedures allows students to choose the best method of production. Through experimentation of traditional media and emerging technologies students are expected to understand, and apply various methods to execute, publish and present final designs.

VCGD 356 | GRAPHIC DESIGN II (1-4-3)

Prerequisite: VCGD 256 | F

This course takes a broader approach to creative design thinking, and encourages exploration of wider visual sources, media and methods of expression. Skills of visual judgment and critical assessment are developed through projects and critiques, which set out more complex and expansive frames of reference, both in terms of research and visual vocabulary.

VCGD 360 | ARABIC TYPOGRAPHY (1-4-3)

Prerequisite: VCAD 301 or VCGD 351 | Upon Demand

This course offers an overview of Arabic typography. Students learn about the historical development, the letterform and the alphabet. The course examines traditional, contemporary and experimental techniques and theories. Projects encompass designing for different media reflecting contemporary Arab culture.

VCGD 361 | BOOK DESIGN (1-4-3)

S

This course introduces the process of designing books. Lectures and assignments cover different aspects of image and type sequencing for book layouts, and various production and binding techniques. Additionally, students learn to apply a unique and appropriate voice to their designs by adding a tone and rhythm that works with the content and form.

VCGD 362 | PACKAGE DESIGN (I-4-3)

F

This course consists not only in the design of the individual package, but also in the design of carton and shipping carton. Students become involved in areas of market research, sales promotion and in identifying consumer trends as they relate to packaging. Also included in the course will be visits to firms dealing exclusively in packaging and production.

VCGD 363 | POSTER DESIGN (I-4-3)

S

This course introduces students to the field of poster design, its history, functions and categories. Through a series of practical projects and exercises, students learn to use meaning and interpretation to create relationships using text and image targeted toward a specific audience.

VCGD 364 | TYPEFACE DESIGN (I-4-3)

Prerequisite: VCGD 351 | Upon Demand

This is an advanced typography course focusing on the various aesthetic and technical aspects of creating a typeface. Students concentrate on refining their judgment, knowledge and technical skill to design a typeface for a specific purpose and/or platform.

VCGD 365 | INFORMATION GRAPHICS (I-4-3)

Prerequisite: VCGD 351 | Upon Demand

This course teaches students to create and apply information graphics to two-dimensional and three-dimensional spaces. The purpose is to push the students' design skills, and to help them apply these skills by solving various user-oriented design problems found in applications such as maps, instruction manuals and signage.

VCGD 451 | TYPOGRAPHY III (I-4-3)

Prerequisite: VCGD 351 | F

This advanced course is focused on multi-page layouts through an understanding of typographic structure, organization and sequence. In addition, students are encouraged to further explore the depths of typographic form and meaning, going beyond the established classical typographic rules, learning to refine their typographic skills to further enrich their visual vocabulary.

VCGD 456 | GRAPHIC DESIGN III (I-4-3)

Prerequisite: VCGD 351 | S

This course continues the approach to creative development established in Graphic Design II and focuses on one of the most essential aspects of graphic design: branding and corporate identity. Students are expected to develop a branding strategy for an institution and develop the brand's image through logo/symbols, color palettes, typography and imagery.

VCPH 201 | PHOTOGRAPHY I (I-4-3)

F

Photography is introduced as a tool for contemporary fine and applied visual arts. Emphasis is placed on a thorough grounding of the technologies and operations of modern digital SLR cameras and image output options, as well as an introduction to the aesthetics of photographic images. A final portfolio is required.

VCPH 261 | PHOTOGRAPHY II (I-4-3)

Prerequisite: VCPH 201 | S

This course explores photography as an expressive medium. In this intermediate course, students will explore more advanced techniques and image manipulation. Students will also focus on the conceptual growth of their imagery in order to build a body of work. A final portfolio will be required for this course.

VCST 201 | PRINTMAKING I (I-4-3)

Prerequisite: VCCC 204 | F

This introductory course explores various forms of traditional and contemporary printmaking, with emphasis on practical and historical knowledge of the tools and materials used in the production of the serial or multiple in art.

VCST 21 I | SCULPTURE I (1-4-3)

Prerequisite: VCCC 102; **Corequisite:** VCCC 204 | F

This course introduces students to the sculptural processes of modeling, casting, carving, and construction. Students work in both figurative and abstract formats as they explore the potential of sculpture as an expressive medium.

VCST 22 I | PAINTING I (1-4-3)

Prerequisite: VCCC 204 | S

This course introduces contemporary and traditional painting techniques and studio practices. Assignments focus on painting from sight: including still life, landscape, and the figure. Beginning with a limited palette, students expand their color sensibility throughout the term.

VCST 23 I | CERAMICS (1-4-3)

S

This class introduces the elements and principles of hand-built ceramics. Students will learn about the basic making methods and materials, and will study the techniques of hand building, slab building, pinching and coiling, paper-clay and slip casting with plaster molds. The course will include an introduction to firing methods and finishing/glaze procedures. Students will develop skills and vocabulary through project based work, historical and contextual presentations and critiques, and learn refinement and craftsmanship whilst developing transferable problem solving skills in arguably the oldest, yet still highly contemporary, artistic material.

VCST 25 I | ILLUSTRATION BASICS (1-4-3)

Prerequisite: VCCC 204 | F (even years)

This course explores concepts and methods employed in contemporary and traditional illustration. Emphasis is placed upon development of ideas and the exploration of varied media. The course encourages a creative and open approach to visual thinking and problem solving.

VCST 30 I | PRINTMAKING II (1-4-3)

Prerequisite: VCST 20 I | S

This course explores traditional and contemporary intaglio and relief printmaking practices with an emphasis on technical problem solving and self-expression within the printmaking medium. Students complete the course with a series of prints based on a common theme.

VCST 31 I | SCULPTURE II (1-4-3)

Prerequisite: VCST 21 I | S

This intermediate course develops the student's understanding of the traditional and contemporary methods and materials. Through lectures, discussions and personal research, the student makes connections to contemporary trends in sculptural practice through the development of a body of studio work.

VCST 320 | PERFORMANCE AND INSTALLATION STUDIO (1-4-3)

S

This course introduces students to a broad range of performance forms and installation art, investigating the content and concepts of the physical self and its relationship to space, audience, technology, and society. Students are encouraged to engage in collaborative and group work, and to experiment in developing individual aesthetic sensibilities.

VCST 32 I | PAINTING II (1-4-3)

Prerequisite: VCST 22 I | F

Building upon their formal understanding of painting, students further their technical skills through the study of more complex subject matter including the figure. Approaches of 20th century painters will be examined.

VCST 40 I | STUDIO ART SEMINAR (3-0-3)

Prerequisite: approval of the Chair, **Corequisite:** VCST 402 | F

Through directed readings, exhibitions, studio visits, and invited speakers, students learn about traditional and contemporary issues in art theory and practice, with the objective of informing their own art making. Students respond through discussions, written work, and presentations.

VCST 402 | ADVANCED STUDIO I (1-4-3)

Prerequisite: approval of the Chair, **Corequisite:** VCST 401 | F

This course focuses on the development of the student's studio practice with ongoing critiques and active discussion often relating to material from VCST 401. A personal direction regarding choices of media, technique, and content is essential.

VCST 410 | PRINTMAKING III (1-4-3)

Prerequisite: VCST 301 | Upon demand

Building upon the printmaking techniques from levels I and 2, students further develop conceptual, compositional, and technical skills through a series of prints on a theme. Students will propose subject or concept, then compose a series of prints exploring this theme, and finish the semester with an exhibition displaying professional quality presentation skills. Students may choose a single printmaking technique to spend the semester exploring, or continue multiple techniques throughout the term.

VCST 411 | SCULPTURE III (1-4-3)

Prerequisite: VCST 311 | Upon demand

This advanced course builds on the student's understanding and use of traditional and contemporary methods and materials gained in Sculpture 2. Through material experimentation, sketches, maquettes and personal research, the student establishes links to modern trends in sculpture by crafting a collection of studio pieces intended for exhibition, showcasing their advanced engagement with current methodologies, techniques, and sculptural approaches.

VCST 421 | PAINTING III (1-4-3)

Prerequisite: VCST 321 | Upon demand

Building upon the painting techniques from levels I and 2, students further develop conceptual, compositional, and technical skills through a series of paintings on a theme. Students will propose a subject or concept to spend the semester painting, will begin with small study paintings and gathering source materials, then compose a series of paintings exploring this theme, and finish the semester with an exhibition displaying professional quality presentation skills.

VCST 451 | STUDIO ART THESIS (1-4-3)

Prerequisite: Grade of C or higher in VCST 401, **Corequisite:** VCCC 480 | S

Students create a thesis which consists of both a practical and written component. Students complete a body of work and will write extensively on this and previous artwork. Students place their work in a contemporary and historical context while furthering senior level artwork begun in the Advanced Studio I and Senior Project courses.

WLDC 201 | CULTURAL ENCOUNTERS AND HISTORICAL TRANSFORMATION (3-0-3)

Prerequisite: ENGL 101 | F, S, SI

The course examines how cross-cultural exchanges and encounters up through the first half of the nineteenth century resulted in social, political, economic and cultural transformation across various regions of the world. Students will explore how the flow of people, capital, commodities, technologies and ideologies shaped different societies and in turn led to innovations in various fields, including science, agriculture, governance, culture & arts, transportation and warfare.

WLDC 202 | CULTURE AND INNOVATION IN A GLOBALIZED WORLD (3-0-3)

Prerequisite: ENGL 101 | F, S, SI

This course examines how the technological, economic, social, and political dimensions of globalization are transforming contemporary societies. Students explore the role of culture and innovation in shaping these transformations, particularly their impact on entrepreneurship, development agendas, and societal change. Using a problem-based learning approach, students investigate how innovative practices such as social entrepreneurship, community-based initiatives, and the use of emerging technologies can provide solutions to current global challenges.

WLDC 250 | MUSIC TRADITIONS OF THE WORLD (3-0-3)

Prerequisite: ENGL 102 | Upon demand

This course provides students with an understanding of the fundamental tenets of music. Students then apply this understanding to various traditional musical styles from throughout the world. The majority of these musical styles are from non-Western cultures.

WLDC 301 | RELIGIONS OF THE WORLD (3-0-3)

Prerequisites: *WLDC 201 or WLDC 202 | Upon demand*

This course surveys all of the most widely recognized (practiced) global religions (Buddhism, Christianity, Hinduism, Islam, and Judaism) as well as other, more regionally located religions (i.e., Jainism, Shinto, Zoroastrianism). Readings from various sacred texts are explored. The course also examines what is/is not traditionally regarded as a “religion.” Also explored is the interconnection between religion and the culture(s) with which they are most closely associated.