

Farmingdale State College

State University of New York

University in the High School

Course Offerings 2019-20

School of Arts & Sciences

Biology Department

- **BIO 120 - General Biology**

A survey of life from the standpoint of humans, including structural and behavioral evolution, functional characteristics, and relationship to the natural world. Recent developments in Biology are explored, including applications of DNA analysis and recombinant DNA technology. The laboratory exercises involve simple investigations of the life processes by utilizing basic research tools. A range of life forms are studied in the laboratory, with particular emphasis on animals ranging from planaria to preserved frogs. Credits: 4

- **BIO 123 – Human Body Health & Disease**

This course is an inquiry into the mechanism of diseases that plague human beings. A systemic approach is taken in which all the major systems of the human body and the significant diseases that affect those systems are studied. Emphasis is on failures of homeostasis as the basic mechanisms of disease. Included are discussions on available treatments and therapies, the impact of new technological developments, and maintaining health and avoiding disease. The laboratory component contains both traditional and computer-generated exercises, which illustrate the onset and development of a variety of diseases and pathological states. Credits: 4

- **BIO 125 – Principles of Nutrition**

This course provides a basic background in the nature and biochemical function of essential and non-essential nutrients, the molecular basis of metabolism and nutrient requirements of living cells and organisms. The role of nutrients in gene expression, genetically modified foods and the role of diet in the treatment of diseases. Credits: 3

- **BIO 135 – Marine Science**

Marine Science is designed to give the student an appreciation and understanding of the dynamics and interactions of the various components (biological, chemical, physical, geological) of the world's oceans. Habitats studied will range from near shore estuarine systems to deep ocean systems. Special consideration will be given to the human use and manipulation of the Long Island coastal zone. Laboratory sessions will include methodologies used in oceanographic sampling and analysis as well as exercises reinforcing lecture material. Field trips will also play an important part of the course work supporting lecture topics. Credits: 4

- **BIO 197 – Human Biology**

An introductory course that teaches biological principles by emphasizing the structural and functional aspects of the human body, especially as they relate to everyday existence. Includes discussion of important collateral issues such as the nature and course of disease, smoking and health, drug abuse, immunity and allergy, human genetics, birth-control, over-population, and sexually transmitted disease. Credits: 3

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School of Arts & Sciences (cont'd.)

Chemistry Department

- **CHM 152 - General Chemistry Principles I**

The first part of a two-semester sequence in General Chemistry Principles with laboratory. This course covers the qualitative and quantitative aspects of scientific measurement, the nature of matter, gases, liquids and solids, energy, atomic theory, properties of elements, chemical bonding, molecular structure and properties, stoichiometry, thermochemistry and solutions. Note: the laboratory course CHM 152L is a part of your grade for this course. Attendance in the laboratory course is required. Approved eye-protection and a laboratory coat are required materials. A student must pass the laboratory course to receive a passing grade in the entire course.

Prerequisite(s): (MP3*, RMAT, RMTB, or MTH 116) and (Regents Chemistry or an equivalent High School Chemistry with Laboratory or CHM 124) Credits: 4

*See Farmingdale State College Catalog Section "Placement for English and Mathematics"

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School of Arts & Sciences (cont'd.)

Criminal Justice Department

- **CRJ 100 – Introduction to Criminal Justice**
Philosophical and historical background of policing throughout the free world; special emphasis is placed on the heritage of British and American policing, the governmental role of law enforcement in society; administration of American justice at all levels of government. The role of technology in law enforcement and crime prevention; history, modes and impact. Credits: 3
- **CRJ 101 – Law Enforcement and Community Relations**
Emphasis will be placed on the numerous and complex factors involved in the areas of human relations as they affect law enforcement. An examination of prejudices, myths, and discrimination, how to control them, and their impact in law enforcement. The use of information management tools for classifying cases with respect to issues of bias. Credits: 3
- **CRJ 115 – Computer Forensics**
This course is an orientation to the study of computer forensic methods. The course will include an analysis of computer hardware that is utilized in forensic investigations such as motherboards, BIOS settings, hard and floppy disk drives and controllers, SCSI controllers and drives and implementations, RAID controllers, boot sequences and related components. Also, this course will introduce the student to methods used in analyzing data storage devices and will include an examination of the physical structures, surfaces and formats of hard disks and other media. Credits: 3
- **CRJ 204 – Criminal Law**
Elements and proof of frequent concern in law enforcement, with reference to principal rules of criminal liability. Importance of criminal law at the enforcement levels is considered from crime prevention to courtroom appearance. Particular emphasis will be placed on the New York State Penal Law. Case analysis method is employed to study case precedents. Computer software for rapid information retrieval will be introduced. Prerequisite(s): CRJ 100* Credits: 3
- **CRJ 205 – Criminal Procedure Law**
Rules of evidence of particular importance at the operational level in law enforcement with emphasis on criminal procedure in areas such as arrest, force, and search and seizure. Particular emphasis will be placed on the New York State Criminal Procedure Law. The use of case tracking tools within prosecution and court units and systems; the use of case outcome analytical techniques to determine trends in practice and effectiveness. Prerequisite(s): CRJ 204* Credits: 3

*NOTE: CRJ courses with pre-requisites cannot be added to a high school's UHS offerings unless the pre-requisite class is offered as well.

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Course Offerings 2019-20

School of Arts & Sciences (cont'd.)

History, Politics & Geography Department - History

- **HIS 114 – Western Civilization I**

A brief survey from ancient Greece and Rome up to 1789, followed by extensive treatment of the ascendancy of early modern Western civilization, together with its social, economic, and political revolutions, from 1500 through the Napoleonic era. Credits: 3

- **HIS 115 – Western Civilization II**

Traces the spread of Western civilization and the development of the modern world by examining the impact of the forces of romanticism, nationalism, industrialism, and intellectual creativity. Credits: 3

- **HIS 117 – World Civilization I**

A survey of major non-Western civilizations and their interaction with one another, as well as with the European West from antiquity through the Early Modern Period. The course will explore ancient polytheistic traditions, the foundations of major world religions (Hinduism, Buddhism, Islam), and the rise of Christianity as a global faith. It will also address non-Western social, political, and economic systems in East Asia, South Asia, the Muslim World, Sub-Saharan Africa, and pre-Columbian America. Credits: 3

- **HIS 118 – World Civilization II**

A survey of the developing world and its interaction with the West since 1700, the course will explore the chaotic effects of the non-Western world's interaction with European imperial powers, the United States, and Soviet Union, focusing on social, economic, cultural, and political change in East Asia, South Asia, the Middle East, Sub-Saharan Africa, and Latin America. The major themes of the course will center on imperialism, nationalism, modernization, the World Wars, and the Cold War. Credits: 3

- **HIS 121 – US History to Reconstruction**

A discussion of the development of the United States from its English origins through Reconstruction, this course shows how a new civilization arose out of revolution, independence, new governmental institutions, and equalitarianism, and illustrating the results of the westward movement, and the causes and consequences of the Civil War. Credits: 3

- **HIS 122 – US History since Reconstruction**

A historical evaluation of American society, assessing Reconstruction, immigration, the nature of imperialism, progressivism, World War I and II, the Cold War, and contemporary American life. Credits: 3

- **HIS 219 – Special Topics in History**

A treatment of diverse topics, chosen by the Department of History, Economics, and Politics for their long-term impact and current historical importance. Credits: 3

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School of Arts & Sciences (cont'd.)

History, Politics & Geography Department – History (cont'd.)

- **HIS 222 – Women in US History**

In what ways is the history of America a gendered history? Emphasizing the diversity of American women, the course situates the ways women have both shaped and been shaped by American society within the broader context of US history since 1865. Topics for investigation include the way different groups of women have experienced American sectionalism, the industrial revolution, urbanization, immigration, war, economic depression, cultural transformations and political change. We will be looking at both unity and diversity in American society, including the conflicts between women and a society based on patriarchy. Credits: 3

- **HIS 270 – Genocide**

The course explores the history of ethnic, religious, and other forms of genocide during the twentieth century. The topics covered will include the Armenian massacres of 1915-1923, the Jewish Holocaust (Shoah), and the Roma Porajmos, as well more recent examples of genocide, including events in Cambodia, Bosnia, and Rwanda. Students will also critically assess other claims of genocide in world history, focusing on related issues such as ethnic cleansing, forced population transfers, etc. Prerequisite(s): Any 100-level or higher HIS or POL course Credits: 3

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School of Arts & Sciences (cont'd.)

History, Politics & Geography Department - Politics

- **POL 105 – Introduction to Politics**

This course will introduce students to the study of politics and to the discipline known as Political Science. Focusing on fundamental concepts of power and authority, the course will examine topics central to each of the main subfields of Political Science: American Politics, Comparative Politics, International Relations, and Political Philosophy. It will also explore some contemporary issues and debates that captivate US politics. Credits: 3

- **POL 110 – Introduction to Legal Studies**

This is a survey course designed to give the student a basic introduction to law beginning with the various schools of legal philosophical thought, criminal and civil law and procedure, and basic contract law. The course provides the student with an understanding and overview of how the American legal system functions including introducing students to the principles of law, the administration of the legal system, legal terminology, and the inter-relationship between politics, governmental structures, legal professionals and the functioning of the legal system. Credits: 3

- **POL 250 – American Politics**

This course introduces students to American Politics by focusing on national politics. In addition to examining the structure of U.S. government at the federal level, this course will also investigate American political behavior (especially political parties, elections, voting) and selected policy debates the animate contemporary political discussion. Credits: 3

- **POL 265 – Comparative Politics**

This course examines a broad range of governmental systems utilizing the comparative methods of analysis. In addition to analysis of selected political systems in the developed world (e.g., Great Britain, the United States, and the Russian Federation), students will also explore the governmental structures of at least one country in the developing world (India, Brazil, the People's Republic of China, etc.). Students will also compare plural democracies, monarchies, dictatorships, and neo-authoritarian forms of government, emphasizing policy-making and contemporary problems facing the state in era of globalization, such as the purported victory of neo-liberalism, the threat of terrorism, and the importance of satellite television and the Internet in shaping politics. Credits: 3

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School of Arts & Sciences (cont'd.)

Mathematics Department

- **MTH 103 – Sets, Probability & Logic**

This course uses set theory to develop the basic concepts of finite probability. The student is introduced to the tree and to the counting methods of devising sample spaces. The probability of mutually exclusive events, dependent and independent events are treated. Some applications to probability distributions of discrete variables are included. Finally, the basic topics in symbolic logic are covered. Prerequisite(s): MP2* or MTH 015 Credits: 3

- **MTH 110 – Statistics**

Basic concepts of probability and statistical inference. Included are the binomial, normal, and chi-square distributions. Practical applications are examined. Computer assignments using Minitab form an integral part of the course. Prerequisite(s): MP2* or MTH 015 Credits: 3

- **MTH 129 – Pre-Calculus with Applications**

This is a precalculus course with applications from various disciplines including technology, science, and business. Topics include families of functions, mechanics of functions, exponential and logarithmic functions, trigonometric functions and complex numbers. The emphasis is on applications and problem solving. A graphing calculator is required. Note: Students completing this course may not receive credit for MTH 117. Prerequisite(s): MP3* or MTH 116 Credits: 4

- **MTH 130 – Calculus I with Applications**

This is a calculus course for those not majoring in Mathematics, Engineering Science or Computer Science. Topics include the derivative, differentiation of algebraic, trigonometric, exponential and logarithmic functions, applications of the derivative and the definite integral. Applications are taken from technology, science, and business. Problem solving is stressed. A graphing calculator is required. Note: Students completing this course will not receive credit for MTH 150. Prerequisite(s): MP4* or MTH 117 or 129 Credits: 4

- **MTH 150 – Calculus I**

This is the first course of the calculus sequence. Topics include, differentiation of functions of one variable, introduction to integration, application of differentiation and integration. A graphing calculator is required. Note: Students completing this course may not receive credit for MTH 130. Prerequisite(s): MP4* or MTH 117 or 129 Credits: 4

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School of Arts & Sciences (cont'd.)

Psychology Department

- **PSY 101 – Introduction to Psychology**

This course is designed to present basic psychological concepts and to introduce students to the scientific study of behavior. Core topics include methods of psychological research, the biological bases of behavior, principles of learning, memory and cognition, personality, and psychopathology. Other selected topics to be covered would include the following: motivation and emotion, life-span development, social psychology, health psychology, sensation and perception, intelligence, human sexuality, statistics, and altered states of consciousness. Credits: 3

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School of Arts & Sciences (cont'd.)

Sociology & Anthropology Department - Anthropology

- **ANT 100 – Introduction to Anthropology**

Anthropology is the scientific study of human-kind. This course offers an introduction to its four major sub-fields, namely; Physical or Biological anthropology (human evolution, the fossil record, ethology); Archaeology (extinct cultures, classical civilizations, pre-history); Linguistics (language origins, development, diffusion, structure, and change); Sociocultural Anthropology (pioneers in the field, cross-cultural research, case studies, and the future). By focusing on the broad cultural implications and complexities of social communication and interaction, anthropology seeks to understand the whole human experience. Credits: 3

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School of Arts & Sciences (cont'd.)

Sociology & Anthropology Department - Sociology

- **SOC 122 – Introduction to Sociology**

This is an introductory course designed to familiarize students with the field of sociology. In addition to learning about the central concepts and major theoretical sociological perspectives, students study human behavior in groups, the organization of social life, the impact of social institutions on individuals, and the process of sociological research. Great emphasis is also placed upon development of students' "sociological imagination" – specifically, the ability to understand the ways that our individual lives are shaped by larger social forces and institutions. Note: Students who take SOC 122 may not receive credit for SOC 122W.

Credits: 3

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School of Business

Business Management Department

- **BUS 101 – Accounting I**

Fundamental accounting concepts and principles are covered through an understanding of the following topics: accounting as an information system; analyzing a transaction; the accounting cycle; accounting for both service enterprises and merchandising businesses; deferrals and accruals; reversing entries; systems design; accounting for cash, receivables, temporary investments and inventory; payroll accounting. Students apply concepts to the preparation of special journals, subsidiary ledgers, worksheets and financial statements. Credits: 3

- **BUS 102 – Accounting II**

Continued development of the principles and concepts introduced in Accounting I. The following topics are included: emphasis on further understanding of generally accepted accounting principles; plant assets; intangible assets; determination of depreciation, depletion and amortization; accounting for partnerships and corporations; long term liabilities; investments in bonds and stock; statement of cash flows; managerial accounting; accounting for manufacturing operations; budgeting and standard costs systems. Prerequisite(s): BUS 101 with a grade of C or higher Credits: 3

- **BUS 109 – Management Theories & Practices**

This introductory course covers management principles pertaining to human resources, individual behavior in organizations, employee motivation and performance, and business ethics. Topics also include managing and the manager's job; planning and decision making; employee performance appraisal and feedback; leadership and influence processes; interpersonal relations and communication; and managing work groups and teams. Credits: 3

- **BUS 111 – Introduction to Business**

This course introduces the student to the fundamentals of American Business and its contemporary environment. It provides an overview of organizational, national, and international trends and their impact on enterprises both large and small. The course develops an understanding of important business concepts, principles, and practices that explain how businesses are formed, how they operate to accomplish their goals, and why/how their success depends on effective management, production, marketing and finance/accounting. Credits: 3

- **BUS 121 – Business Mathematics**

The fundamentals of applied mathematics in the field of accounting, finance, marketing, and selling. Topics include interest, bank discount, insurance, and annuities. The use of arithmetic as a managerial tool is stressed. Credits: 3

- **BUS 131 – Marketing Principles**

This course provides the student with a sound knowledge of the basic elements of the marketing process. Major topics include the features of consumer and organizational markets, market segmentation, and target market strategies. Product planning and development, brands, packaging and other product features are covered. Price determination and the use of various pricing strategies are discussed. The factors in the selection of channels of distribution and the features of wholesaling and retailing are considered. Elements of the promotional process such as sales, advertising, and sales promotion are included. Ethical and legal issues in marketing, marketing of services, global marketing, and marketing on the Internet are also covered. Credits: 3

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School of Business (cont'd.)

Business Management Department (cont'd.)

- **BUS 188 – Advertising Art & Applications**

This course will combine basic advertising principles with practical media application. This course shall introduce students to the business of advertising in a contemporary global environment. The course will explore concepts of advertising, including elements of media selection and copywriting within the parameters of internal budgets, management and the application of actual advertising creation. In addition, students will create advertising, integrating the roles of the creative director and marketing manager. Note: Students completing this course may not receive credit for VIS 188. Credits: 3

- **BUS 202 – Business Law I**

An introduction to the nature and sources of law; the role the legal system; the law of torts and crimes; the law of contracts; and real and personal property. Credits: 3

- **BUS 267 – Small Business Management**

This course helps students develop an understanding of the relationship of small business management to the management process. It describes the fundamentals of small business management. A study is made of major problems and pitfalls faced by managers of small businesses. Credits: 3

- **BUS 280 – International Business**

This course will cover the rapid growth of international business and proliferation of multinational firms. Topics include the nature of international business and the historical development of global markets and marketing. Credits: 3

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School of Business (cont'd.)

Computer Systems Department

- **BCS 101 – Programming Concepts & Problem Solving**

This course will provide an introduction to programming logic and problem-solving techniques using different programming languages. The topics covered in this course will provide the skills needed to learn languages such as Visual Basic, C++ and JAVA. Topics include such items as constants and variables, data types, scope of variables, basic logic constructs, subroutines and functions. Students who have completed BCS 120 or equivalent cannot take BCS 101. Credits: 3

- **BCS 102 – Computer Concepts & Applications**

This is an introductory course in the use of personal computers in today's society. Students will receive instruction in basic computer concepts and terminology, the fundamentals of the Windows operating system and have hands on experience at the beginning to intermediate level using Microsoft Word, Excel, and PowerPoint. The Internet will be used to supplement textbook and lecture materials. Computer Systems students cannot use BCS 102 to meet a BCS Elective requirement. Credits: 3

- **BCS 110-114 – Introductory Special Topics in Computer Programming and Information Systems**

This course will cover introductory topics that are not covered in the regular curriculum. Topics may vary from semester to semester and reflects the interests and needs of students, faculty and industry. Permission of Department Chair is required. Credits: 3

- **BCS 130 – Website Development**

This is an introductory course in Web page authoring in which students will create Web pages using HTML (HyperText Markup Language) and CSS (Cascading Style Sheets). In addition to the introductory topics of changing text appearance, creating hyperlinks, and inserting images into a Web page, advanced topics such as layout, tables, and forms will also be covered. Credits: 3

- **BCS 208 – Introduction to Networks**

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IPv4 and IPv6 addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LAN's, perform basic configurations for routers and switches, and implement IP addressing schemes. The laboratory component of this course will give the students hands-on experience configuring equipment needed to build a LAN. Credits: 3

- **BCS 209 – Routing & Switching Essentials**

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. The laboratory component of this course will give the students hands-on experience configuring routers, switches and basic WAN connectivity. Prerequisite(s): BCS 208 with a grade of C or higher Credits: 3

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School of Business (cont'd.)

Economics Department

- **ECO 110 – Introduction to Personal Finance**

Students will learn how to navigate the financial decisions they must face and how to make informed decisions related to budgeting, banking, credit, insurance, spending, taxes, saving, investing, inheritance, and living independently. The course will develop financial literacy skills, an understanding of economic principles, and will provide a basis for responsible citizenship and career success.

Credits: 3

- **ECO 120 – The Global Economy**

This course provides an overview of current global economic issues. Basic economic concepts are introduced in order to explain differences in the level of development among countries, the direction of trade, the causes and effects of international financial crises, and the motivations of some countries to transition to a market economy. The course also discusses the way in which countries coordinate efforts to deal with matters of international concern such as pollution and global warming. Topics also include the role of international institutions including the World Bank, the international Monetary Fund, the World Trade Organization, and the United Nations. Credits: 3

- **ECO 156 – Principles of Economics (Macroeconomics)**

This course is designed to introduce classic macroeconomic issues such as unemployment, inflation, national income and economic growth. The course will provide a unified framework to address these issues and to study the impact of different policies, such as monetary and fiscal policies, on the aggregate behavior of the economy. Analytical tools will be used to understand the experiences of the United States and other countries, and to address how current policy initiatives affect their macroeconomic performance. Credits: 3

- **ECO 157 – Principles of Economics (Microeconomics)**

This course introduces students to fundamental economic concepts and theory, including demand, supply, and the formation of equilibrium prices in product and resource markets. Students will learn a specific set of analytical tools as well as how to apply them to current policy issues. In addition, the course offers an introduction to applied fields such as industrial organization (market structures), labor economics, international trade, and market failure. Credits: 3

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School of Business (cont'd.)

Sport Management Department – Sport Management

- **SMT 110 – Introduction to Sport Management**

An investigation into the scope of the sport industry; a growing major business enterprise in the United States and in much of the world. Functions of management, skills and attributes required of a sport manager, and roles of a manager are examined and researched. Attention focuses on how the managerial process relates to sport organizations and their products. Students become acquainted with career opportunities in the sport management field. Credits: 3

- **SMT 225 – Sport Marketing**

The effective management of information is essential to successful business and athlete development in sport related fields. Sport information directors use software to track stats at every level, including high school, college and professional, and then transmit these stats to national organizations. Computer-aided facility, management, financial, operational and accounting systems for the running of sport franchises and fitness clubs, salary capology, and handicap computational systems are just a few of the other applications for information management that will be addressed in this class. Prerequisite(s): SMT 110*Credits: 3

*NOTE: SMT courses with pre-requisites cannot be added to a high school's UHS offerings unless the pre-requisite class is offered as well.

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School of Business (cont'd.)

Sport Management Department - Physical Education

- **PED 203 – Introduction to First Aid, AED and CPR Training**

This course is designed to help students understand the principles of cardiopulmonary resuscitation and the effectiveness of the trained first responder. Students will become proficient in performing CPR on adults, children and infants. Students will also learn to perform various methods of Airway and Pulmonary Resuscitation and AED. The American Red Cross or the American Heart Association certification will be awarded upon the completion of the course. The course will also involve first aid when caring for accidents or sudden illness. Students will learn how to administer first aid and conduct immediate rescue and care of an emergency victim. All students will receive a Standard First Aid Card. Credits: 3

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School of Business (Cont'd.)

Visual Communications Department

- **ART 123 – Art History**
An analysis of the social, physical and psychological influences affecting the artist during various historical periods through the present. Emphasis is on the interrelationship between the changing purposes of art and variations in the meaning and form of artistic expression. Credits: 3
- **VIS 101 – Introduction to Drawing**
Students will be introduced to basic observational freehand drawing techniques, including line, form, light and shade and composition. Students will study examples of work from various artists and have an opportunity to apply this knowledge in the studio and in outdoor settings. Credits: 3
- **VIS 105 – Introduction to Photography**
This course is an introduction to the history, art and technique of photography. By utilizing their own cameras and commercial processing, students will acquire the knowledge and skills necessary to produce well-composed and properly exposed creative photographs. The estimated student cost for materials, including film, processing and other supplies is approximately \$200 (not including camera). Credits: 3
- **VIS 140 – Introduction to Graphic Design**
An introduction to the fundamental concepts of design as applied to the communication of information. The primary objective of this course is to develop the students' perceptual and technical skills. Class discussions and hands-on projects will stress the effective use of typography, images, and page layout principles to achieve a balance between the design and readability of documents.
Credits: 3
- **VIS 188 – Advertising Art & Applications**
This course will combine basic advertising principles with practical media application. This course shall introduce students to the business of advertising in a contemporary global environment. The course will explore concepts of advertising, including elements of media selection and copywriting within the parameters of internal budgets, management and the application of actual advertising creation. In addition, students will create advertising, integrating the roles of the creative director and marketing manager. Note: Students completing this course may not receive credit for BUS 188. Credits: 3

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School of Engineering Technology

Architecture & Construction Management Department

- **ARC 101 – Introduction to Architecture & Construction**

This is an introduction to elementary concepts, literacy and graphics in the architectural and construction field. This elective course is for students who have never taken any hand drawing/drafting and Computer Aided Drafting (CAD). The course will provide a hands-on experience in architectural and construction drawing/drafting, sketching, model building, orthographic project. The use of reading scales, lengths, areas and volumes in drawings is developed to help students visualize and understand building elements and plans. The course will include basic CAD fundamentals, site visits and future employment requirements and opportunities for those interested in the major. Credits: 3

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School of Engineering Technology (cont'd.)

Automotive Technology Department

- **AET 101 – Internal Combustion Engine Theory and Servicing**
This is a theory/laboratory course designed to introduce the student to basic heat engine types, their physical configurations and various engine operating cycles. Analytic pressure-volume diagrams are utilized to illustrate the effects of gasoline engine design on performance and combustion requirements. Topics discussed include design, construction, inspection techniques and servicing of the internal combustion engine and its components. Laboratory activities are performed to provide relevant hands-on experience to the students. Also engine aspiration, combustion using the principles of fluid dynamics and thermodynamics, volumetric efficiency and fuel metering systems will be discussed in this course. Credits: 3
- **AET 104 – Combustion Engine Theory**
This is a theory course designed to introduce the student to basic heat engine types, their physical configurations and various engine operating cycles. Analytic pressure-volume diagrams are utilized to illustrate the effects of gasoline engine design on performance and combustion requirements. Engine-vehicle performance parameters are analyzed, utilizing individual and group problem solving techniques. Credits: 2
- **AET 105 – Fuel Systems – SI Engines**
This is a theory/laboratory course developed to give the student a basic understanding of spark ignited internal combustion engine fuel systems. Topics discussed include engine aspiration and combustion using the principles of fluid dynamics and thermodynamics as they apply to the intake, exhaust, volumetric efficiency and fuel metering systems. Engine air/fuel requirements are examined along with state-of-the-art fuel delivery systems (carburation and fuel injection), with consideration given to fuel economy and exhaust emissions. Performance characteristics of SI Engines utilizing alternate types of fuels are also examined. Credits: 2
- **AET 106 – Suspension and Control Systems**
This is a theory/laboratory course designed to provide a thorough understanding of the design, construction and operation of automotive chassis and suspension systems. Topics will include a study of the vehicle frame, suspension, steering, wheels, tires and braking systems. Emphasis is directed to the analysis of the vehicle's systems during operation. Credits: 3
- **AET 109 – Automotive Electrical Principles**
This is an automotive theory course designed to introduce students to basic automotive-oriented electrical principles as they relate to both A.C. and D.C. circuits utilized in contemporary automotive electrical systems. Credits: 1
- **AET 150 – Automotive Computer Applications**
This is a theory/laboratory course designed to introduce the student to basic computer utilization and programming. Topics include a thorough introduction to personal computers, instruction in and development of basic programming. Students will be required to develop basic programs for technical automotive problem solving and practical automotive applications. Credits: 2

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School of Engineering Technology (cont'd.)

Automotive Technology Department (cont'd.)

- **AET 290 – Project Seminar**

This course is designed to provide the student with the challenge of an independent project. Requirements will include the completion of an extensive faculty approved research/construction project. This project must be related to the automotive field. The student is responsible for the original project concept, which must be supported by preliminary, progress and final technical reports. A video-taped oral presentation is also required. Credits: 1

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Course Offerings 2019-20

School of Engineering Technology

Aviation Department

- **AVN 100 – General Aeronautics**

This course provides introductory orientation and practical information essential to the career progression of both pilots and aviation administrators. Topics include: attributes of an aviation professional; aircraft design, components, performance, operation, maintenance and safety with human factors emphasis. Credits: 3

- **AVN 101 - Aviation Industry: A History Perspective**

This course is a basic survey of the aviation industry viewed from a historical perspective. Topics covered will range from the early days of aviation to the present. The course will also examine the chronology of aviation laws and regulations and how they have changed from aviation beginnings in the United States to present day. At the conclusion of this course, the student will have a comprehensive knowledge of the U.S. air transportation industry and will understand its significant social/economic impact upon the nation and the world. Credits: 3

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Course Offerings 2019-20

School of Engineering Technology (cont'd.)

Electrical Engineering Technology Department – Electrical Engineering Technology

- **EET 105 – Introduction to Digital Electronics**

An introduction to the fundamental concepts of Digital Electronics. Topics covered: Number systems, Boolean Algebra, Logic Gates, Combinational Circuits, Karnaugh Map Minimization Techniques, Adders, Signed Numbers, Multiplexers, Code-Converters, Decoders, Encoders, Comparators and 7-segment displays. The laboratory component of the course reinforces the topics covered in the theory through relevant experiments performed by students using logic trainers. Credits: 2

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School of Engineering Technology (cont'd.)

Electrical Engineering Technology Department – Environmental Sciences

- **ENV 101 – Energy Sustainability and Environment**

This is an introductory course to create and enhance the critical awareness of the student regarding various forms of energy, sustainability issues and the impact on the environment through unbridled use of energy in the present-day context. A scientific and technological approach is used to discuss various topics. The knowledge base of this course is derived from certain natural sciences such as Physics, Chemistry, Biology and Eco-Science. The main topics of discussion are: Forms of energy, energy conservation, impact on the environment by the use of energy, forms of renewable energy and sustainability issues. The critical policy issues related to energy are also discussed. The course prepares the student to be a fully aware citizen on energy issues facing the community and the world. Credits: 3

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School of Engineering Technology (cont'd.)

Mechanical Engineering Technology Department

- **MET 109 – Computer Programming & Applications**

This is an introductory course in a computer programming language. Programs are specifically written to be used in the areas of statics, strength of materials, machine design, heat transfer, and fluid mechanics. Applications of the theoretical concepts are covered in the required laboratory. Credits: 2

- **MET 117 – Manufacturing Processes**

The main purpose of this course is to introduce the mechanical engineering technology student to the principles and operation of mechanical equipment such as lathes, drill press, milling machines and measuring requirements and measuring instruments. Several manufacturing processes such as welding, powder metallurgy, sheet metal forming, extrusion, etc. are also covered. Individual laboratory projects will be assigned to each student to reinforce the topics covered in the theory. Credits: 2

- **MET 215 – Special Topics in Engineering**

This course will cover various applications of basic principles of statics, strength of materials, electrical principles, introduction to basic principles of electromechanical control systems and introduction to Robotics and automation systems. Students will work on independent projects related to various engineering concepts by utilizing various CAD software. Credits: 3

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School of Health Sciences

- **HST 101 – Current Issues in Health**

This introductory, multidisciplinary course will provide the student with a broad background of information on current issues in health care. This course is designed to facilitate and enhance the professional growth of future health care providers. Topics will include common and emerging health problems, an examination of the health care delivery system, effective wellness behaviors and common ethical issues occurring in health care today. Credits: 3

- **HST 105 – Medical Terminology**

This course is the study of medical terminology. The focus is on prefixes, suffixes, word roots and their combining forms by an introduction to medical word building and the general structure of the body and its various body systems. Students will learn word construction, spelling, usage, comprehension, and phonetic 'sounds like' pronunciations as well as some common medical abbreviations. This course is just right for Health Studies students who are considering a career in dental hygiene, nursing, or medical technology. Credits: 3