NUBIAN AMERICAN ADVANCED COLLEGE
Knowledge is key...

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INSTITUTE OF TECHNICAL & VOCATIONAL STUDIES
(Associate of Applied Science)

The Institute will provide a vocational education/ training that will prepare individuals in the Area of Skill acquisition to be productive individuals that will contribute to the social and economic development of our society. NAAC will continually strive to strengthen and improve the impact we have on our students by transforming their lives and making them self-dependent, more skillful, employable by making them employers of labor themselves.
Programs offered in the Institute includes Professional Associate Degrees such as, Associate of Applied Science (AAS), /Diploma and Certificates and Certification.

PROGRAMS

AIR CONDITIONING, HEATING AND REFRIGERATION TECHNOLOGY, AAS

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. The NAAC Heating, Air Conditioning and Refrigeration technology program offers training in current technology for diagnosing, servicing, repairing, installing and maintaining heating, air conditioning, refrigeration and energy systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems.
Diploma graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.

This degree requires a minimum of 64 credits in program requirements, program electives and general education

PROGRAM OUTCOMES:
Upon successful completion of the Air Conditioning, Heating, and Refrigeration degree, the graduate should be able to:
*Perform preventive maintenance on heating and refrigeration systems.
*Repair electrical components and controls in heating and air conditioning systems.
*Demonstrate the ability to comply with the NC HVAC Building Codes.
*Employ personal and professional ethics and interpersonal skills that are expected in the workplace.

*Apply the refrigeration principles and practices to heating, air conditioning and refrigeration systems.
*Demonstrate knowledge of EPA regulations on a National Certified Test.
**Demonstrate knowledge of basic Hydronic Heating principles.
Demonstrate knowledge of airflow characteristics and how they affect Indoor Air Quality.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity	3
AHR 112	Heating Technology	4
AHR 213	HVACR Building Code	2
ENG 101	English Composition I	3
	Total Semester Credit Hours	17

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 160	Refrigerant Certification	1
AHR 211	Residential System Design	3
MAT143	Quantitative Literacy	3
AHR 212	Advanced Comfort Systems	4
	Total Semester Credit Hours	19

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
AHR 255	Indoor Air Quality	2
AHR 240	•Hydronic Heating	2
CIS 110	Introduction to Computers	3
AHR 130	HVAC Controls	3
PSY 101	Introduction to Psychology	3
COM 120	Introduction to Interpersonal Communication	3
	Total Semester Credit Hours	16

4th Semester Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
AHR 125	HVACR Electronics	3
AHR 180	HVACR Customer Relations	1
AHR 225	Commercial System Design	3
AHR 235	Refrigeration Design	3
HUM 115	Critical Thinking	3
AHR 212	Advanced Comfort Systems C	4
	Total Semester Credit Hours	17

AHR 110 - Introduction to Refrigeration 5 Credits

This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems.

AHR 111- HVACR Electricity: 3 Credits

This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.

AHR 112 - Heating Technology: 4 Credits

This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

AHR 113 - Comfort Cooling: 4 Credits

This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels.

Co-requisite: AHR 110

AHR 114- Heat Pump Technology: 4 Credits

This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

Pre-requisite: Successful completion of AHR 110 or AHR 113with a grade of "C" or better.

AHR 160 - Refrigerant Certification: 1 Credit

This course covers the requirements for the EPA certification examinations. Topics include small appliances, high pressure systems, and low pressure systems. Upon completion, students should be able to demonstrate knowledge of refrigerants and be prepared for the EPA certification examinations.

Co-requisite: AHR 110

AHR 120 - HVACR Maintenance: 2 Credits

This course introduces the basic principles of industrial air conditioning and heating systems. Emphasis is placed on preventive maintenance procedures for heating and cooling equipment and related components. Upon completion, students should be able to perform routine preventive maintenance tasks, maintain records, and assist in routine equipment repairs.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

COM 120 - Introduction to Interpersonal Communication: 3 Credits

This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships.

Pre-requisite: Successful completion of ENG 101 with a grade of "C" or better.

HUM 115 - Critical Thinking: 3 Credits

This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas.

Pre-requisite: Successful completion of ENG 101 with a grade of "C" or better.

MAT 143 - Quantitative Literacy: 3 Credits

This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship.

CIS 110 - Introduction to Computers: 3 Credits

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems.

AHR 125 - HVACR Electronics: 3 Credits

This course introduces the common electronic control components in HVACR systems. Emphasis is placed on identifying electronic components and their functions in HVACR systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

Pre-requisite(s): Successful completion of AHR 111, ELC 111 or ELC 112 with a grade of "C" or better.

AHR 180 - HVACR Customer Relations: 1 Credit

This course introduces common business and customer relation practices that may be encountered in HVACR. Topics include business practices, appearance of self and vehicle, ways of handling customer complaints, invoices, telephone communications, and warranties.

AHR 213- HVACR Building Code: 2 Credits

This course covers the North Carolina codes that are applicable to the design and installation of HVACR systems. Topics include current North Carolina codes as applied to HVACR design, service, and installation.

AHR 211- Residential System Design 3 Credits

This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design.

AHR 212 - Advanced Comfort Systems: 4 Credits

This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems.

Pre-requisite: Successful completion of AHR 114 with a grade of "C" or better.

AHR 255 - Indoor Air Quality: 2 Credits

This course introduces the techniques of assessing and maintaining the quality of the indoor environment in residential and commercial structures. Topics include handling and investigating complaints, filter selection, humidity control, testing for sources of carbon monoxide, impact of mechanical ventilation, and building and duct pressures.

AHR 240 - Hydronic Heating: 2 Credits

This course covers the accepted procedures for proper design, installation, and balance of hydronic heating systems for residential or commercial buildings. Topics include heating equipment; pump, terminal unit, and accessory selection; piping system selection and design; and pipe sizing and troubleshooting. Upon completion, students should be able to assist with the proper design, installation, and balance of typical hydronic systems.

Pre-requisite: Successful completion of AHR 112with a grade of "C" or better.

AHR 225 - Commercial System Design: 3 Credits

This course covers the principles of designing heating and cooling systems for commercial buildings. Emphasis is placed on commercial heat loss/gain calculations, applied psychrometrics, air-flow calculations, air distribution system design, and equipment selection. Upon completion, students should be able to calculate heat loss/gain, design and size air and water distribution systems, and select equipment.

Pre-requisite: Successful completion of AHR 211 with a grade of "C" or better.

AHR 235 - Refrigeration Design: 3 Credits

This course covers the principles of commercial refrigeration system operation and design. Topics include walk-in coolers, walk-in freezers, system components, load calculations, equipment selection, defrost systems, refrigerant line sizing, and electric controls. Upon completion, students should be able to design, adjust, and perform routine service procedures on a commercial refrigeration system.

Pre-requisite: Successful completion of AHR 110with a grade of "C" or better.

AUTOMOTIVE MANAGEMENT, AAS

Nubian American Advanced College (NAAC) Automotive Management Curriculum provides students with an opportunity to earn an associate of Applied Science Degree that utilizes both their technical and business skills by building upon a strong academic core. Students will also develop technical skills in selected automotive maintenance and repair areas. The business courses will develop skills in management, marketing and sales.

The Automotive Management Curriculum will provide students with the skill sets necessary to meet the industry's demand for a more sophisticated and technologically astute workforce. This degree program offers advanced technological training, preparation in business and marketing combined with a solid foundation in communication and writing. The Automotive Management A.A.S. incorporates key skills in automotive maintenance and repair, as well as automotive management and marketing to enhance graduate success.

Automotive Management is a growing field that offers students a wide range of opportunities for employment and/or transfer upon graduation. This Automotive A.A.S. degree program is in keeping with NAAC's mission to offer an appropriate range of affordable programs that serve the educational needs of a diverse population and to promote and enhance excellence in learning.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
AUT 120	Engines	6
AUT 125	Automotive Electricity	4
BUA 110	Legal and Ethical Environment of Business I (Business Law I)	3
CMPT 101	Computer Concepts and Applications I	3
	Total Semester Credit Hours	16

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
AUT 140	Fuel Systems	4
AUT 145	Passenger Car Chassis I	3
ENG 101	English Composition I	3
MAT 150	College Algebra with Trigonometry	3
	Business Elective	3
	Total Semester Credit Hours	16

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
AUT 235	Automotive Electronics	5
AUT 245	Passenger Car Chassis II	3
AUT260 or	Business Management	3
BUA 207	Organization and Management	3
ENG 102	English Composition II	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Hours	17

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
AUT 220	Alternative Fuels	3
AUT 250	Diesel Engines	3
	Business Elective Credits: 3	3
ECO 100	Principles of Macroeconomics	3
SOC 100	Sociology	3
	Total Semester Credit Hour	15

AUT 120 Engines 3Credits

This course includes classroom and laboratory work covering the theory of operation and repair of the gasoline engine, including valves and valve train, piston and connecting rod assembly, crankshaft and bearings. The laboratory work covers inspection, diagnosis, and correct repair procedures for all type automotive engines.

AUT 125 Automotive Electricity 3Credits

This course provides an introduction to the principles of electricity. Topics covered include current, voltage, resistance, series and parallel circuits, magnetism, inductance, capacitance, and DC current. Emphasis is placed on the diagnosis, overhaul, and testing procedures of all automotive electrical components.

AUT 140 Fuel Systems 3Credits

This course provides an in-depth study of the theory, operation, and correct repair procedures for the fuel delivery systems used on gasoline engine equipped vehicles. The following topics will be covered: storage systems, fuel pumps (mechanical and electrical), electronic fuel injection, turbocharging, exhaust sensors, carburetion and emissions testing. Laboratory sessions will cover the diagnosis and repair of component parts. Related fuel system testing and adjustments will be stressed. **Pre-requisite:** Successful completion of AUT 125 with a grade of "C" or better**.**

145 Passenger Car Chassis I 3Credits

This course provides a comprehensive study of the chassis operation, repair and service procedures including front and rear suspension, steering systems, and braking systems. Laboratory work will cover hands-on tasks related to classroom instruction. Focus will be placed on overhaul and adjustment procedures used in repairing chassis components.

AUT 220 Alternative Fuels 3Credits

This course is designed to utilize a combination of classroom discussion and demonstration. Students will become familiar with the various types of alternate fuels, as well as the design and installation of alternative power systems in vehicles. Discussion topics and research will focus on the need for, and practicality of, the various fuel alternatives. Sample topics include environmental concerns, cost efficiency, drivability characteristics and service concerns. The demonstration portion of the class will expose students to the installation and maintenance procedures used in alternative fuel vehicles. Utilizing the various alternative fuel vehicles donated to the college, students will be able to examine, analyze and eventually diagnose and repair the current alternative fuel systems.

AUT 235 Automotive Electronics **3Credits**

This course is designed to familiarize automotive students with all types of automotive computerized electronic systems. Main topics include: electron theory, semiconductors, transistors, microprocessor, electronic circuits, schematics and diagnosis. The laboratory exercises will provide students with hands-on experience necessary to become proficient in diagnosis, adjustment and repair of these automotive systems.

Pre-requisite: Successful completion of AUT 125 with a grade of "C" or better.

AUT 245 Passenger Car Chassis II **3Credits**

This course is a study of theory, operation, and service procedures, including wheels, tires, wheel alignment, balance and climactic control systems. The laboratory experience (AUT 225-AUT 230) allows students to become familiar with the equipment and instrumentation necessary to service these chassis components.

BAD 110 Legal and Ethical Environment of Business I (Business Law I) **3Credits**

This course is an introduction to the origins, framework, and concepts of legal and ethical environment of business with emphasis on contracts and business organizations, including partnerships, corporations, limited liability companies and the law of agency.

BAD 207 Organization and Management **3Credits**

This course covers organizational theory, principles, and practices. It will explore the management functions of organizing, including planning, staffing, directing, and controlling; social responsibility; the effect of multicultural diversity in the workplace; and leadership styles and motivational theories.

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

COM 125 Public Speaking 3 Credits

The aim of this course is to equip students through speech planning, organization, delivery and evaluation for various extemporaneous speaking experiences which they may encounter in their professional and personal lives. This course includes speeches to inform, demonstrate, persuade and evoke emotion.

CMP 101 Computer Concepts and Applications I **3 Credits**

This course provides both a practical and conceptual background in computing and information processing and management fundamentals. Students receive hands-on experience while learning the latest graphical interface technology and how it interacts with word processing, spreadsheets, database management, presentation graphics and the internet. Microsoft Windows and Windows applications are the software products used. Lab time outside of class is required. Students must have some familiarity with the Windows Operation System or computers using graphical user interfaces (e.g. Mac OS or Linux). Students with no computing experience should take CMPT 099, Computer Literacy prior to enrolling in CMPT 101.

MAT 150 College Algebra with Trigonometry **4 Credits**

The course includes a review of algebra and numerical trigonometry. Topics include factoring, rational expressions, solving linear and quadratic equations, solving simultaneous linear equations, functions, lines, exponentials, logarithms, numerical trigonometry and solving triangles. This course requires the use of a scientific calculator.

MAT 165 Basic Calculus with Analytic Geometry 4 Credits:

The course is a continuation of MAT 150 College Algebra with Trigonometry. It includes topics from analytical geometry and analysis and applications of differential and integral calculus to algebraic and selected transcendental functions. **NOTE**: A graphing calculator may be required and will be discussed in class.

Pre-requisite: Successful completion of MAT 150.with a grade of "C" or better.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

SOC 100 Sociology 3 Credits

An introduction to scientific study of human social interaction with emphasis on societies, groups, organizations, social networks and communities as the units of analysis. Topics covered include culture, social structure, socialization, sex roles, groups and networks, organizations, deviance and social control, inequality and social stratification, race and ethnic relations and social institutions.

ECO 100 Principles of Macroeconomics 4 Credits

This course examines the evolution of economic theory and practice, the structure and functions of the free enterprise system, national income accounting, and fiscal and monetary policy, and their effects on economic policy.

AUT 250 Diesel Engines 3 Credits

This course is designed to familiarize students with the theory of operation, repair and overhaul, assembly and adjustment of diesel engines, including the components and service procedures that are unique to the diesel engine: fuel, fuel delivery system, troubleshooting, computer control of diesel engines, electrical systems and maintenance.

AUTOMOTIVE PARTS MANAGEMENT, AAS

Students must take both the Automotive Parts Certificate and the Auto Parts Management Certificate as well as the required general education courses to complete the Automotive Parts Management AAS degree.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ASE 101	Auto Shop Orientation	2
ASE 102	Intro to the Automotive Shop	2
ASE 110	Brakes I	2
ASE 120	Basic Auto Electricity	2
ENG 101	English Composition I	3
FRE 101	Elementary French I	3
	Total Semester Credit Hours	14

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ASE 111	Auto Brake II	1
ASE 122	Auto Elec Safety Systems	1
ASE 123	Starting & Charging Sys	2
ASE 130	General Engine Diagnosis	2
ASE 171	Laboratory Experience II	0
ASE 201	Automotive Parts Management I	1
ENG 102	English Composition II:	3
ECO 201	Principle of Macroeconomics:	3
	Total Semester Credit Hours	13

3rdSemester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
ASE 134	Autofuel& Emissions Syst I	2
HOR 116 -	Steering and Suspension I	2
ASE 151	Man Trans/Transaxles &Clutches	2
ASE 203	Automotive Parts Management II	2
ASE 221	Auto/Diesel Body Electrical	4
ASE 231	Auto Comp & Ignition Sys	2
	Total Semester Credit Hours	14

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
ASE 141	Suspension and Steering II	2
ASE 162	Auto Engine Service	2
ASE 152	Man Trans/Transaxles/Clutch II	2
ASE 250	Auto Trans/Transaxle Service	1
COM 115	Public Speaking	3
ECO 202	Principle of Microeconomics:	3
	Total Semester Credit Hours	13

Summer 1st Semester		
Course Code	Course Title	Credit Unit/ Hours
MAT 135	Intro to Statistics: 1	3
PSY 101	Introduction to Psychology	3
MAT 107	Career Math	3
BIO 113	Essentials in Biology	3
	Total Semester Credit Hours	12

ASE 101 Auto Shop Orientation **2 Credits**

Provides students with safety instruction in the shop and on the Automobile. Emphasis is placed on the proper use and care of test equipment, precision measuring and machining equipment, gaskets, adhesives, tubing, wiring, jacks, presses, and cleaning equipment and techniques.

ASE 102 Intro to the Automotive Shop **2 Credits**

Prepares the incoming automotive student to work in the shop safely and gain familiarity with the shop and common equipment.

ASE 110 Brakes I **2 Credits**

Covers basic operation of automotive braking systems. This includes operation, diagnosis and basic repair of disc, drum and basic hydraulic braking systems.

ASE 111 Auto Brake II **2 Credits**

Teaches skills to perform service checks and procedures to automotive foundation braking system and to identify components and types of ABS and traction control systems.

ASE 120 Basic Auto Electricity **2 Credits**

Introduces vehicle electricity and includes basic electrical theory, circuit designs, and wiring methods. It also focuses on multimeter usage and wiring diagrams.

ASE 122 Auto Elec Safety Systems 1 Credits

Teaches the student to Identify operation of vehicle lighting systems, Supplemental Inflatable Restraints (SIR), windshield wiper, driver warning systems and vehicle accessories.

ASE 123 Starting & Charging Sys **2 Credits**

Covers the operation, testing and servicing of vehicle battery, starting and charging systems. Includes voltage testing of starter and generator, load testing and maintenance of a battery.

ASE 130 General Engine Diagnosis **2 Credits**

Teaches students how to perform basic engine diagnosis to determine condition of engine. This will include engine support systems.

ASE 134 Autofuel & Emissions Syst I 2 Credits

Focuses on lecture and laboratory experiences in the diagnosis and repair of automotive fuel emission control systems, filter systems and spark plugs. Course also includes maintenance to diesel (DEF) systems.

ASE 140 Steering and Suspension I 2 Credits

Focuses on lecture and related experiences in the diagnosis and service of suspensions and steering systems and their components.

ASE 141 Suspension and Steering II 2 Credits
Covers design, diagnosis, inspection, and service of suspension and steering systems used on light trucks and automobiles. Course includes power steering and SRS service.

ASE 151 Man Trans/Transaxles &Clutches. **2 Credits**
Focuses on lecture and related laboratory experiences in the diagnosis and repair of automotive manual transmissions, transaxles and clutches and related components.

ASE 152 Man Trans/Transaxles/Clutch II **2 Credits**
Focuses on lecture and related laboratory experiences in the diagnosis and repair of automotive differentials, four wheel and all-wheel drive units.

ASE 162 Auto Engine Service **2 Credits**
Covers engine sealing requirements and repair procedures, engine fasteners, bolt torque and repair of fasteners. Course will also cover cooling system and basic engine maintenance.

ASE 171 Laboratory Experience II **0 Credits**
Continues to build upon the principles that are expected to be understood by students.

ASE 201 Automotive Parts Management I **1 Credits**
Familiarizes the student with the job requirements and responsibilities of an automotive parts specialist. Included is instruction in the proper completion of parts invoices, repair orders, sales receipts and tickets, and other forms that are utilized in a parts business.

ASE 203 Automotive Parts Management II **2 Credits**
Familiarizes the student with handling and pricing procedures utilized in parts management including warehouse distribution, jobbing, retail and wholesale pricing. Workplace safety, stocking, shipping, and receiving, and managing employees are also covered.

ASE 221 Auto/Diesel Body Electrical **4 Credits**
Provides a comprehensive study of the theory, operation, diagnosis, and repair of vehicle accessories.

ASE 231 Auto Comp & Ignition Sys **2 Credits**
Focuses on lecture and laboratory experiences in the inspection and testing of typical computerized engine control systems.

ASE 250 Auto Trans/Transaxle Service **1 Credits**
Focuses on practical methods of maintaining, servicing, and performing minor adjustments on an automatic transmission and transaxle.

COM 115 Public Speaking **3 Credits**

Combines the basic theories of communication with public speech performance skills. Emphasis is on speech preparation, organization, support, audience analysis, and delivery.

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: ENG 101 with a grade of C or better**.**

ECO 201 Principle of Macroeconomics: 3 Credits

Focuses on the study of the national economy, emphasizing business cycles and long-run growth trends. Explores how macroeconomic performance is measured, including Gross Domestic Product and labor market indicators. Examines the saving-investment relationship and its relationship to Aggregate Supply and Aggregate Demand. Discusses money and banking, international trade, fiscal and monetary policy. Explores the macroeconomic role of the public sector.

ECO 202 Principle of Microeconomics: **3 Credits**

Focuses on the study of individual decision making, emphasizing households, business firms and industry analysis. Explores market models, including competition, monopoly, monopolistic competition and oligopoly. Examines market failure and related efficiency criteria for government intervention. Explores public policy, including labor market issues, poverty and the environment.

FRE 101 Elementary French I **3 Credits**

This course presents the fundamentals of French. Fluency in understanding, speaking, reading and writing within the context of the French society and French-speaking countries, history and culture is emphasized.

MAT 135 Intro to Statistics: 1 **3 Credits**

Introduces descriptive and inferential statistics, with an emphasis on critical thinking and statistical literacy. Topics include methods of data collection, presentation and summarization, introduction to probability concepts and distributions, and statistical inference of one and two populations. This course uses real world data to illustrate applications of a practical nature.

CIS 118 Introduction PC Applications 3 Credits

This course introduces basic computer terminology, file management, and PC system components. Provides an overview of office application software including word processing, spreadsheets, databases, and presentation graphics. Includes the use of a web browser to access the Internet.

BIO 113 Essentials in Biology 3 Credits

Essentials in Biology. One-semester biology for non-majors; overview of essential biological concepts and their application to real world and contemporary issues; topics include evolution, biodiversity, cellular, molecular and forensic biology, genetics and heredity to scientific literacy, human impact on the environment, genetically modified organisms and emerging diseases. genetics, evolution, and ecology

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

MAT 107 Career Mathematics 3 Credits

Covers material designed for career technical or general studies students who need to study particular mathematical topics. Topics may include measurement, algebra, geometry, trigonometry, graphs, and/or finance.

HIGHWAY MAINTENANCE MANAGEMENT, AAS

This program is designed for students wanting to complete a two-year AAS Degree in Highway Maintenance Management and enter the workforce. Students explore leadership and management skills in the highway maintenance industry. This AAS degree prepares highway maintenance employees to pursue careers among leaders in Highway Maintenance Management in federal, state, county, and municipal public works agencies and also private sector industry partner organizations. Students develop a firm grasp of highway maintenance while learning leadership and management strategies to increase employee effectiveness through developing skills in project management, planning, supervision, communication, and team building.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
HWY 101	Intro to Highway Maintenance & Operations	3
MAN 128	Human Relations in Organizations	3
MAN 226	Principles of Management	3
MAT 108	Technical Mathematics	4
ENG 131	Technical Writing I	3
	Total Semester Credit Hours	16

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
MAN 116	Principles of Supervision	3
MAN 224	Leadership	3
MAN 241	Project Management in Organizations	3
CIS 118	Introduction to Pc Applications	3
COM 125	Interpersonal Communication	3
	Total Semester Credit Hours	15

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
MAN 230	Corporate Ethics & Social Responsibility	3
COM 220	Intercultural Communication:	3
HWY 100	Highway Maintenance & Operations Safety	1
HWY 105	Traffic Control	2
HWY 110	Highway Asset Management 1	1
HWY 115	Pavement Preservation	2
HWY 255	Highway Maintenance Leadership	4
	Total Semester Credit Hours	16

	4th Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
HWY 210	Gravel Road Maintenance	2
DRV 138	Driver Training	6
ACC 101	Fundamentals Of Accounting	3
BUS 217	Business Communication And Report Writing	3
HWY289	Highway Maintenance Capstone	2
	Total Semester Credit Hours	16

TOTAL CREDIT HOURS: 62

HWY 101 Intro to Highway Maintenance &Operations 3 Credits
Introduces highway maintenance and operations job activities within state, county, city, and municipal public works (road and bridge) agencies. This course explores career opportunities in highway maintenance and assessments of fit to career interests.

MAN 128 Human Relations in Organizations 3Credits
Introduces interpersonal relations most directly linked to attainment of organizational and individual goals in the business world. Other factors include motivation, career development, and conflict resolution. It explores the importance of effective communication in organizations. Addresses organizational issues such as employee motivation and customer complaints as related to product or service defects

MAN 226 Principles of Management 3 Credits
Provides an overview of the principles of management. Emphasis is on the primary functions of planning, organizing, staffing, leading and controlling with a balance between the behavioral and operational approaches.

MAT 108 Technical Mathematics 4 Credits
Covers mathematical material designed for career and technical students. Topics include measurement, algebra, geometry, trigonometry, and vectors. These are presented at an introductory level and the emphasis is on applications.

ENG 131 Technical Writing I: 3 Credits
Develops skills one can apply to a variety of technical documents. Focuses on principles for organizing, writing, and revising clear, readable documents for industry, business, and government.

MAN 116 Principles of Supervision 3 Credits
Defines supervision, examines the functions of a supervisor, explains the necessary skills for successful supervision, relates supervision with human resources, and discusses supervisory challenges.

MAN 224 Leadership 3 Credits
Focuses on the leadership skills for contemporary organizations. Covers development and communication and a shared vision to motivate and empower employees to manage conflict, to negotiate, and to develop teams.

MAN 241 Project Management in Organizations 3 Credits
Investigates the concepts and applicability of project management within organizations. It examines the unique nature of the project management structure including its emphasis on integrated decision making throughout a lifecycle of a product from the planning, implementing, monitoring, and controlling phases. Emphasis is on the processes of initiating, planning, executing, controlling, and closing activities of project management.

CIS 118 Introduction to Pc Applications 3Credits

This course introduces basic computer terminology, file management, and PC system components. Provides an overview of office application software including word processing, spreadsheets, databases, and presentation graphics. Includes the use of a web browser to access the Internet.

COM 125 Interpersonal Communication 3 Credits

Examines the communication involved in interpersonal relationships occurring in family, social, and career situations. Relevant concepts include self-concept, perception, listening, nonverbal communication, and conflict.

MAN 230 Corporate Ethics & Social Responsibility 3Credits

Examines the concept of ethical corporate responsibility and how an organization's resources, including individual employees and work groups of the corporation, identify and respond to social and ethical problems. Included in the course are topics of corporate ethics and social responsibility, how these concepts apply to business and management principles, and the individual corporate citizen's involvement with making ethical decisions.

COM 220 Intercultural Communication: 3 Credits

Explores the link between culture and communication and will develop and/or enhance communication skills and the abilities appropriate to a multicultural society. Emphasis will be on understanding diversity within and across cultures. Relevant concepts include perception, worldview, context, ethics, language, and nonverbal communication.

HWY 100 Highway Maintenance & Operations Safety 1 Credit

Introduces performance of highway maintenance and operations work activities emphasizing safety and establishing a safety-focused work culture.

HWY 105 Traffic Control 2Credits

Introduces design, set up, and maintenance of temporary traffic control in a highway maintenance work zone.

HWY 110 Highway Asset Management 1 Credit

Introduces the strategic approach to managing and prioritizing the use of highway assets (e.g., equipment, materials, staffing) to best achieve targeted roadway and bridge performance levels given existing asset conditions and available funding. This course instructs how to use reliable data and clear performance metrics to support trade-off decision making on the most effective use of assets to advance agency objectives.

HWY 115 Pavement Preservation 2 Credits
Introduces concepts, techniques, and treatments to extend the life of asphalt pavements.

HWY 255 Highway Maintenance Leadership 4 Credits
Introduces leading a highway maintenance organization and managing highway maintenance and operations activities. This course covers the integrated technical and non-technical/managerial roles and responsibilities of a highway maintenance manager.

HWY 210 Gravel Road Maintenance 2 Credits
Introduces the management of unimproved, gravel, and low volume roads. Instructs on the best maintenance and rehabilitation practices of gravel roads within available agency budgets.

DRV 138 Driver Training 6 Credits
Provides over-the-road driving experience with the driving instructor to prepare participants for the CDL driving test. This class drills students in safe driving procedures both on and off the road, including driving empty and loaded vehicles, proper turning and backing, appropriate use of brakes, shifting, and observing speed limits, signals, road signs, and port-of-entry procedures.

ACC 101 Fundamentals of Accounting 3 Credits
Introduces accounting fundamentals with emphasis on the procedures and practices used in business organizations. Major topics include the accounting cycle for service and merchandising companies, including end-of-period reporting.

US 217 Business Communication and Report Writing 3Credits
Emphasizes effective business writing and covers letters, memoranda, reports, application letters, and resumes. Includes the fundamentals of business communication and an introduction to international communication.

HWY 289Highway Maintenance Capstone 2Credits
Provides a demonstrated culmination of learning within a given program of study.

DIGITAL ANIMATION, AAS

This program is designed for students wanting to complete a two-year AAS Degree in Digital Animation and enter the workforce. Students explore basic design concepts, basic and advanced drawing techniques, story boarding, and 3D animation technology. This digital media degree gives students the foundation to go into a variety of career fields, from traditional advertising agencies to design agencies to video production companies to web production companies. Students learn how to use industry-standard design software and learn about typography, images, and the creative process involved in designing graphics that clearly

present information. Our digital media degree program also includes a series of art courses to give students a solid foundation in the core of graphic design.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 117	Introduction to Visual Communication	3
MGD 153	3D Animation I	3
MGD 143	Motion Graphic Design I (Software)	3
	Total Semester Credit Hours	15

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
MGD 142	Digital Animatics	3
MGD 167	Game Design I	3
MGD 211	Adobe Photoshop II	3
ART 121	Drawing I	3
MGD 253	3D Animation II	3
	Total Semester Credit Hours	15

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
MGD 167	Game Design I	3
MGD 212	Adobe Illustrator II	3
MAT 107	Career Mathematics	3
MGD 243	Web Motion Graphic Design II	3
MGD 165	After Effects I	3
	Total Semester Credit Hours	15

	4th Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
MGD 267	Game Design II	3
MGD 268	Business for Creatives	3
MGD 141	Web Design I	3
MGD 164	Digital Video Editing I	3
ENG 101	English Composition I	3
	Total Semester Credit Hours	15

MGD 111 Adobe Photoshop I **3 Credits**

Concentrates on the high-end capabilities of Adobe Photoshop as an illustration, design and photo retouching tool. Students explore a wide range of selection and manipulation techniques that can be applied to photos, graphics and videos. Course competencies and outline follow those set out by the Adobe Certified Associate exam in Visual Communication Using Adobe Photoshop.

MGD 112 Adobe Illustrator I **3 Credits**

Concentrates on the high-end capabilities of Adobe Illustrator as an illustration, design and vector drawing tool. Students learn how to use the tools to create digital artwork that can be used in web design, print media, and digital screen design. Course competencies and outline follow those set by the Adobe certified Associate exam in Visual Communication using Adobe Illustrator.

MGD 212 Adobe Illustrator II 3 Credits

Enables the student to continue development of electronic drawing skills through practice and use of state-of-the-art illustration software.

MGD 117 Introduction to Visual Communications **3 Credits**

Surveys visual communications, its history and impact on society. A foundation course for graphic design and illustration majors and a survey for non-majors who are interested in the field. Assignments require minimal artistic talent

MGD 153 3D Animation I **3 Credits**

Encompasses all major aspects of creating 3D characters using animation software. Using developed characters, the student will learn how to animate for personality.

MGD 117 Introduction to Visual Communications **3 Credits**

Surveys visual communications, its history and impact on society. A foundation course for graphic design and illustration majors and a survey for non-majors who are interested in the field. Assignments require minimal artistic talent.

MGD 153 3D Animation I **3 Credits**

Encompasses all major aspects of creating 3D characters using animation software. Using developed characters, the student will learn how to animate for personality.

MGD 143 Motion Graphic Design I (Software) **3 Credits**

Stresses creation of animation and dynamic interactive media for web and multimedia applications to a professional standard. Students will learn how to develop projects for time-based media, key-frames, tweens and symbols. Students will learn how to use actions to trigger timeline events to create interactive behaviors.

MGD 142 Digital Animatics **3 Credits**

Introduces the steps followed by professional animators and game designers for producing media in a digital environment. Students learn the foundational skills of planning, organizing, storyboards, and pre-visualization techniques necessary to create animated stories. Students will also study the history of animation and game design.

MGD 167 Game Design I **3 Credits**

Introduces students to game design from conceptual development and functionality, through production of a virtual world prototype. Students examine such things as character registration, in-betweens, inking and clean up used for creating real-time game environments. Storytelling and visual metaphor development are emphasized.

MGD 211 Adobe Photoshop II **3 Credits**

Develops and reinforces image composition techniques learned in Adobe Photoshop I, MGD 111. Fundamentals are continuously reinforced as new design techniques are introduced.

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

MGD 253 3D Animation II **3 Credits**

Addresses more advanced aspects of creating 3D characters on the computer. Students also examine facial animation, lip synchronization, scene design and lighting set-ups.

MGD 243 Web Motion Graphic Design II **3 Credits**

Stresses the complex creation of 2D animated motion graphics concentrating on the prior skills learned and the use of scripting and behaviors. Students will create motion graphics using these skills and apply them to websites. Website justification of motion graphics will be stressed, appraised and weighed.

MGD 165 After Effects I **3 Credits**

Provides the fundamental techniques for creating digital motion graphics such as 2D animations, animated logos, video graphics, etc. Classes cover relevant tools and techniques as well as industry standards, delivery methods and output.

ART 131 Visual Concepts 2-D Design **3 Credits**

Examines the basic elements of design, visual perception, and artistic form and composition as they relate to two-dimensional media.

ART 121 Drawing I **3 Credits**

Investigates the various approaches and media that students need to develop drawing skills and visual perception.

MAT 107 Career Mathematics **3 Credits**

Covers material designed for career and technical students who need to study particular mathematical topics. Topics include measurement, algebra, geometry, statistics, and graphs. These are presented at an introductory level and the emphasis is on applications.

ART 221 Drawing II **3 Credits**

Explores expressive drawing techniques with an emphasis on formal composition, color media and content or thematic development.

MGD 267 Game Design II **3 Credits**

Explores more advanced features of game design. Students examine such things as integration of mainline code, subroutines and interrupts into game structure. I/O structure, playtesting and distribution are emphasized.

MGD 141 Web Design I **3 Credits**

Introduces web site planning, design and creation utilizing HTML through industry-standard development tools [may list specific software]. Emphasis is placed on applying stylistic decisions using cascading style sheets. Web-based considerations regarding color, typography, aesthetics, user interface design, and process integration with visual-based design tools will be explored.

MGD 164 Digital Video Editing I **3 Credits**

Introduces digital non-linear video editing. Students will capture, compress, edit, and manipulate video images using a personal computer. Assembly techniques including media management, editing tools, titles, and motion control; transitions and filters, and special effects are explored.

MGD 268 Business for Creatives **3 Credits**

Presents a guide to freelance work and a study of business practices and procedures and models unique to creative occupations (graphic design, web design, animation, fine arts). Discussion includes determining charges, business forms, business planning, tax structure, licenses and registration, self-promotion (resume, website, portfolio, business identity package). Course may include visits by professionals in the field and discussion of career opportunities in a quickly changing career field.

FILMMAKING - GENERAL - AAS

Nubian American Advanced College NAAC's Filmmaking - General, offers training for one career paths with five specializations in the film industry. Students studying traditional Film/Video Production will learn all phases of filmmaking, pre-production, production, and post-production.

Program Outcomes

Students will be able to:

I. Compose effective treatments and scripts for use in common video and film genres including documentaries, dramas, commercials, news, and public service announcements. Demonstrate the preparation needed for film and video production, management (including budgeting, supervision of personnel, permitting, scheduling and guild/union relations) and post-production supervision.

II. Describe accepted film industry distribution processes including promotions, advertising, and publicity. Demonstrate industry standard film/video editing and post-production processes used in the completion of shorts, trailers, documentaries, and features.

III. Apply cinematographic concepts to film/video projects including camera setup, lighting, and scene design. Develop professionally acceptable resumes, demo reels and interview techniques needed for employment within the film industry.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
ENG 101	English Composition I	3
RTVB 132	TV/Video Field Production	3
RTVB 130	Audio/Radio Production I	3
RTVB 231	Film and Video Editing	3
FLMC 131	Survey of the Motion Picture	3
	Total Credit Units/ Hours	15

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
RTVB 232	TV/Video Production Workshop I	3
RTVB 132	Scriptwriting	3
FLMC 135	Production Management	3
ARTS 134	Art History II (14th century to present)	3
FLMC 233	Advanced Film and Video Editing	3
	Total Credit Units/ Hours	15

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
FLM 234	Directing for Film or Video	3
FLM 237	Cinematography	3
FLM 235	Screenwriting for Features, Shorts and Documentaries	3
ECO 131	Introduction to Economics	3
FLM 134	Lighting for Film or Video	3
	Total Credit Units/ Hours	15

	4th Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
FLM 230	Audio Post Production	3
FLM 236	Production Development - Producing	3
MAT 132	- Mathematics for Business and Social Sciences	3
RTV 240 or	Portfolio Development (Capstone) OR	3
FLM 280	Cooperative Education - Cinematography and Film/Video Production	3
PHL 101	Introduction to Philosophy	3
	Total Credit Units/ Hours	15

Total Credits 60

ENG 101 - English Composition I 3 Credits

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

RTV 132TV/Video Field Production 3 Credits

Video field camera set up and operation for broadcast and digital media. Incorporates basic editing and field audio techniques.

RTV 130 Audio/Radio Production I 3 Credits

Concepts and techniques of sound production including basic recording, mixing, and editing techniques.

FLM 134 Lighting for Film or Video 3 Credits

Lighting techniques for 16mm film or video production. (This class demonstrates advanced lighting techniques for 16mm film and video productions. Using a variety of lab projects and location settings, students will use lights, filters, in-camera special effects and mood setting techniques to enhance shot composition and camera movement. Topics also include operating film cameras, light meters and selecting film stock. Students are required to attend additional lab hours outside of class.)

FLM 131Survey of the Motion Picture 3 Credits

Overview of film History, Civilization, and techniques including introduction to cinematic elements and approaches to analysis and criticism.

RTV 132Scriptwriting 3 Credits

Writing scripts for film and electronic media. Emphasizes format and style for commercials, public service announcements, promos, news, and documentaries.

ECO 131 Introduction to Economics 3 Credits

This course is a brief survey of the major topics in macroeconomics and microeconomics. The focus is on introducing the science of economics and preparing a foundation for those wishing to take further economics courses. This course is designed for those wishing a nontechnical introduction to economic analysis.

FLM 135 Production Management 3 Credits

Managing above- and below-the-line film or video production costs. Emphasizes analysis of scripts and treatments to determine production costs, crewing requirements, location needs, equipment rentals, and associated production costs.

PHL 101 Introduction to Philosophy 3 Credits

A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications.

MAT 132 - Mathematics for Business and Social Sciences 3 Credits

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

ART134Art History II (14th Century to the Present) 3 Credits

A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day. This course is a global investigation of the styles and methods of artistic production covering the Renaissance period to Present. Media studied include: drawing, painting, sculpture, architecture, printmaking, textiles, ceramics, metal arts, photography, and digital arts. Using this framework, universal themes are studied within their historical, political,

economic, theological, sociological, conceptual and ethnic contexts. ARTS 1303 is not a prerequisite. This course satisfies the fine arts or component area option of the HCC core

RTV 231 Film and Video Editing 3 Credits
Film and broadcast editing for the preparation and completion of shorts, trailers, documentaries, and features.

RTV 232 TV/Video Production Workshop I 3 Credits
Application and design of video productions in location or studio shoots with real deadlines and quality control restrictions.

RTV 234Portfolio Development 3 Credits
Preparation and presentation of a portfolio suitable for employment in the media industry. This course is intended to be taken in the last semester.

FLM 230Audio Postproduction 3 Credits
The technology, creative application and requirements for producing audio soundtracks for film and video. (This course explores the technology, creative application and requirements for producing audio soundtracks for film and video projects. Topics include time code, synchronization, mixing, Foley, dialog replacement, sound effects and location sound. The students will work on computerized workstations to produce finished audio tracks for various projects. Students are required to attend additional lab hours outside of class.)

FLM 233 Advanced Film and Video Editing 3 Credits
Exploration of the creative possibilities of non-linear film and video editing. Includes editing aesthetics, titles, graphic design, compositing, and special effects.

FLM234Directing for Film or Video 3 Credits
Directing to lead a production team. (This course teaches the craft of directing to students who aspire to lead a production team. By analyzing the work of classic and contemporary directors, the class investigates the art and language of filmmaking. Topics include framing and composition, camera angles, camera movement, blocking of actors, visualizing action, and creating a sequence, script breakdown, and techniques for establishing mood, character, and conflict.)

FLM237 Cinematography 3 Credits
Theoretical elements and practical applications of cinematography. (This class teaches theoretical elements and practical application of cinematography. While learning techniques of film production, students study historical and contemporary trends and styles. Theoretical topics include differences in film stocks, exposure, color theory and filters. Professional techniques that alter an image?s character are demonstrated and discussed. Practical tests and scenes are shot using color and black and white film stocks. Students are required to attend additional lab hours outside of class.)

FLM 235Screenwriting for Features , Shorts and Documentaries 3 Credits
Screenwriting for the principle genres of film. (This class emphasizes screenwriting for the principle genres of film. Students will create treatments from dramatic concepts, turn these treatments into screenplays and complete full shooting scripts by the course's end. Topics include scriptwriting, formatting conventions and structural analysis of comedies, dramas, documentaries and short films. At the conclusion of the course students will submit an original script to a scriptwriting contest. Students are required to attend additional lab hours outside of class.)

FLM 236 Production Development - Producing 3 Credits
Sequential steps of supervision in all phases of film production and distribution. Includes resource acquisition and allocation. (During this class the student will address three primary questions posed when developing an idea for a film: What are you going to film? How are you going to film it? How are you going to structure the production? This class will teach students how to explore these questions fully before production begins. Class discussions, student projects and instructor analysis will emphasize the pre-production process: storyboarding shot lists, scheduling, location scouting, stock footage and budgeting. The class will also address design and aesthetic decisions in costuming, makeup and set design. Students are required to attend additional lab hours outside of class.)

FLM 238Cooperative Education / Cinematography and Film / Video Production 3 Credits
Career-related activities encountered in the student?s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

LANDSCAPE TECHNICIAN DIPLOMA

Nubian American Advanced College’s Landscape Technician diploma program is based on the principles of sustainability, conservation and environmental sensitivity. Students will learn about landscape design and development, site construction, general horticulture, grounds maintenance, and related technologies through a combination of in-class studies and hands-on landscape training.

This program will be of interest to those considering a career in the landscape industry, are starting their own business in the landscape industry, or are currently in the industry and wish to update their knowledge and provide more comprehensive services.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
COM 110	Introduction to Communication	3
MAT 110	Math Measurement & Literacy	3
HOR 112	Landscape Design I	3
HOR 160	Plant Materials I	3
HOR 116	Landscape Management I	3
	Total Semester Credit Units	15

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
HOR 244	Computer Aided Drafting and Design (CADD) for Landscape Designers .	3
HOR 265	Advanced Plant Materials	2
HOR 217	Landscape Management II	2
HOR 253	Horticulture Turfgrass	3
HOR 166	Soils & Fertilizers	3
	Total Semester Credit Units	13

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
AGR 170	Soil Science	3
WBL 122	Work-Based Learning II (Work Experience:)	2
HOR 164	Horticulture Pest Management	3
AGR 214	Agricultural Marketing	3
HOR 114	Landscape Construction	3
	Total Semester Credit Units	14

COM 110 - Introduction to Communication 3 Credits

This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal group, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts

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MAT 110 - Math Measurement & Literacy 3 Credits
This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

HOR 112 - Landscape Design I 3 Credits
This course covers landscape principles and practices for residential and commercial sites. Emphasis is placed on drafting, site analysis, and common elements of good design, plant material selection, and proper plant utilization (encouraged use of native plants and discouraged use of invasive species). Upon completion, students should be able to read plans and draft a landscape design according to sustainable practices.

HOR 160 - Plant Materials I 3 Credits
This course covers identification, culture, characteristics, and use of plants in a sustainable landscape. Emphasis is placed on nomenclature, identification, growth requirements, cultural requirements, soil preferences, and landscape applications. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials, including natives and invasive plants.

WBL 122 - Work-Based Learning II 2 Credits Work Experience: 20 Credits
This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

HOR 164 – Horticulture Pest Management 3 Credits
This course covers the identification and management of plant pests including insects, diseases, and weeds. Topics include pest identification and beneficial organisms, pesticide application safety and use of least toxic methods of management. Upon completion, students should be able to manage common landscape pests using least toxic methods of control and be prepared to sit for North Carolina Commercial Pesticide Ground Applicators license.

HOR 166 - Soils & Fertilizers 3 Credits
This course covers the physical and chemical properties of soils and soil fertility and management. Topics include soil formation; classification; physical, chemical, and biological properties (including microorganisms); testing; and fertilizer application. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media according to sustainable practices.

AGR 170 - Soil Science **3 Credits**

This course covers the basic principles of soil management and fertilization. Topics include liming, fertilization, soil management, biological properties of soil (including beneficial microorganisms), sustainable land care practices and the impact on soils, and plant nutrients. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media according to sustainable practices.

HOR 162 - Applied Plant Science **3 Credits**

This course introduces the basic concepts of botany as they apply to horticulture. Topics include nomenclature, physiology, morphology, and anatomy as they apply to plant culture. Upon completion, students should be able to apply the basic principles of botany to horticulture.

HOR 168 - Plant Propagation **3 Credits**

This course is a study of sexual and asexual reproduction of plants. Emphasis is placed on seed propagation, grafting, stem and root propagation, micro-propagation, and other propagation techniques. Upon completion, students should be able to successfully propagate ornamental plants.

HOR 114 - Landscape Construction **3 Credits**

This course introduces the design and fabrication of landscape structures/features. Emphasis is placed on safety, tool identification and use, material selection, construction techniques, and fabrication. Upon completion, students should be able to design and construct common landscape structures/features.

HOR 116 - Landscape Management I **3 Credits**

This course covers information and skills necessary to analyze a property and develop a management schedule. Emphasis is placed on property measurement, plant condition, analysis of client needs, and plant culture needs. Upon completion, students should be able to analyze a property, develop management schedules, and implement practices based on client needs.

WBL 112 - Work-Based Learning I **2 Credits**

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

HOR 265 - Advanced Plant Materials **2 Credits**

This course covers important landscape plants. Emphasis is placed on identification, plant nomenclature, growth characteristics, cultural requirements, and landscape uses. Upon completion, students should be able to correctly select plants for specific landscape uses.

HOR 217 - Landscape Management II **2 Credits**

This course provides additional opportunities to design plans, write contracts, and present proposals. Emphasis is placed on the development, pricing, and presentation of proposals and additional exploration of cultural applications. Upon completion, students should be able to analyze a property, develop a management plan, and price and present that plan.

Pre-requisite(s): Successful completion of HOR 110 or HOR 116with a grade of "C" or better.

HOR 253 - Horticulture Turfgrass **3 Credits**

This course covers information and skill development necessary to establish and manage landscape turfgrasses. Topics include grass identification, establishment, cultural requirements, application of control products, fertilization, and over seeding techniques. Upon completion, students should be able to analyze a landscape site and determine those cultural and physical activities needed to establish or mange a quality turf.

Pre-requisite(s): Successful completion of HOR 162 or HOR 166with a grade of "C" or better.

AGR 214 - Agricultural Marketing **3 Credits**

This course covers basic marketing principles for agricultural products. Topics include buying, selling, processing, standardizing, grading, storing, and marketing of agricultural commodities. Upon completion, students should be able to construct a marketing plan for an agricultural product.

HOR 244 Computer Aided Drafting and Design (CADD) for Landscape Designers .

This unit describes the skills and knowledge required to use a range of computer-aided design and drafting (CADD) program functions to produce drawings. The focus of this unit is on the technical skills required to operate CADD, not on design skills.

Total Landscape Technician Diploma: **37 Credits**

BAKING & DECORATIVE ARTS TECHNICAL DIPLOMA

The Baking & Decorative Arts technical diploma program at Nubian American Advanced College (NAAC), candidates will gain wide-ranging, hands-on experiences in baking and pastry arts. Candidates will receive practical and theoretical training on producing bakery products from scratch (like pastries, tortes and hearth breads) cake decorating, sugar and chocolate work, and plated dessert presentations, and will also learn real-world merchandising and sales training by working in the bakery on campus.

Students in the Baking & Decorative Arts program may attend full or part time.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BDA 100	Principles of Sanitation	1
BDA101	Yeast Breads	4
BDA 103	Bakery Retail	1
BDA 105	Baking Principles	2
BDA 107	Intro to Baking	3
BDA 109	Experimental Baking	1
BDA 111	Cake Decorating	3
	Total Semester Credit Units	15

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BDA 112	Chocolate	2
BDA 114	Specialty Cakes & Miniatures	3
BDA 116	Artisan Breads & Breakfast Pastries	3
BDA 118	Bakery Production	3
BDA 120	Advanced Cake Decorating	3
BDA 122	Baking Seminar	1
BDA124	Nutrition	1
	Total Semester Credit Units	16

BDA 100 Principles of Sanitation 1 Credit

Covers food service sanitation principles and the role of food service personnel in the prevention of contamination and food borne illness. Certification through the National Restaurant Association Educational Foundation is a requirement for completion and can be used to apply for state

BDA101 Yeast Breads 4 Credits

Students develop manual baking skills and a working knowledge of the production and finish various yeast doughs including straight doughs and pre-ferments. Students learn both handcrafted and machine methods in the make-up of these products.

BDA 103 Bakery Retail 1 Credit

The lab is used as a simulated bakery in this course with products being merchandised through the bakery store. Students are responsible for service case presentation as well as effective merchandising displays and customer service.

BDA 105 Baking Principles 2 Credits

Students in this course will acquire a general understanding of basic baking principles. The functions of the major ingredients used in baking and pastry making are discussed, as well as the different types of bakery products. Students learn about the methods for producing bakery products as well as the equipment, both machine and hand tools required. Baker's math problems are calculated.

BDA 107 Intro to Baking 3 Credits

Students develop a foundation of baking principles through hands-on application of production equipment in a state-of-the-art baking lab. Students will prepare a variety of standard bakery products to obtain knowledge of many baking processes. Safe use of bakery equipment and proper sanitation procedures are emphasized.

BDA 109 Experimental Baking 1Credit

Provides the opportunity to discover functions of ingredients through lab experiments. Ingredient amounts and procedures are varied in specific formulas and results are observed to determine optimum formulation.

BDA 111 Cake Decorating 3 Credits

Hands-on instruction in the basics of production cake decorating with attention given to the techniques of icing cakes. Cake decorating areas include script, borders, basic flowers, and seasonal decorating. Students practice icing cakes and decorating; emphasis is placed on accuracy and speed to simulate industry standards.

BDA 112 Chocolate 2 Credits

Students are introduced to the world of chocolate. The history and production of chocolate is explored. Learners sample a wide variety of chocolates from different companies, as well as specific types of chocolate. Products are made using these different chocolates and then compared and evaluated. Students will also learn how to make a variety of seasonal candies.

BDA 114 Specialty Cakes & Miniatures 3Credits

This course covers all aspects of specialty cake baking, constructing, and assembly. Products include various types of foam cakes, creamed cakes, icings and fillings. European classic recipes as well as current trends in cakes will be demonstrated with lab time for practice. An assortment of miniature bakery products will be produced.

BDA 116 Artisan Breads & Breakfast Pastries 3 Credits

This course provides students with a working knowledge of the production of pre-fermented yeast doughs and sourdoughs. In addition, students produce Viennoiserie, both laminated such as croissant and Danish, and non-laminated such as Brioche and sweet dough. Production methods and speed are emphasized.

BDA 118 Bakery Production 3 Credits

The lab is used as a simulated bakery in this course with products being merchandised through the bakery store. Students make items with an emphasis on production speed to help understand the flow of a real bakery. Students are responsible for service case presentation as well as effective merchandising displays and customer service.

BDA 120 Advanced Cake Decorating 3 Credits

Hands-on practice with advanced cake decorating techniques is provided. Techniques highlighted in this class include air brushing, buttercream flowers, dimensional design and layout, and tiered cake assembly.

BDA 122 Baking Seminar 1 Credit

Covers current and relevant issues related to baking and decorative arts. Guest professionals provide expertise and knowledge about specific areas in the baking industry. Field trips will be conducted at businesses in the baking and decorative arts industry such as bakeries, production facilities, chocolate shops, and custom cake shops. Marketing and social media will be explored.

BDA124 Nutrition 1 Credit

Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are discussed as well as the latest guidelines set forth by governmental agencies and health organizations. Students learn about healthful cooking methods needed to modify and create menus for specific health concerns. The role of diet in disease prevention also is discussed.

FINE WOODWORKING AND CABINET MAKING, AAS

The Fine Woodworking and Cabinet Making program provides students with one– and two-year options tailored for differing occupational goals. Students will gain the knowledge and skills necessary to plan and complete cabinetry projects. Students choose courses in drafting, cabinet layout, estimating, cabinet-making, furniture, and millwork. Students apply their studies by building different types of cabinets in each year of their program. The Fine Woodworking and Cabinet Making program provides the student with the knowledge and skills necessary to plan and complete cabinetry, furniture and millwork projects. Students learn to work with prints, specifications, and shop drawings. Emphasis is placed on selecting proper materials, determining the best procedures, manufacturing parts to specification, assembling, and finishing individual projects. Students learn the fundamentals of working with wood in well - equipped shop, from planning a project to adding the finishing details. From using traditional woodworking equipment and hand tools to the latest computer numerically controlled (CNC) machinery and software, students learn to plan and process wood in the most efficient manner. Students will learn the setup and operation of wood working machinery and equipment, breakout of lumber and panel components, laminating, veneering, machining,

sanding, assembly and finishing. Successful graduates of this program will have the skills necessary to become employed in a variety of custom woodworking environments including cabinet shops, yacht building, architectural millwork, or furniture making.

Students who successfully complete the Associate in Applied Science Degree will be able to:

- Visualize, design, and prepare drawings and specifications for furniture and cabinets.
- Describe the grades and uses of materials commonly used in the trade, including lumber, veneer, particleboard, fiberboard, plastic laminates, adhesives, and abrasives.
- Explain how the structure of wood and its mechanical and physical properties relate to the quality and performance of wood projects.
- Produce high quality products by maintaining tolerances; using cut-off saws, jointer, planers, ripsaws, edge-gluing equipment; and utilizing finish machining operations involving the use of a variety of stationary and portable equipment to Woodworking Career Alliance standards.
- Design, construct and use jigs and patterns for machining and assembly operations.
- Setup machine operation and identify the various tooling requirement for specific CNC machines.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
DTG 123	Drafting for Cabinet Making I	3
FWC 102	BasicWoodworking I	3
FWC 103	Basic Woodworking II	4
ENG 101	College Composition I	3
MAT 113	Technical Mathematics I	3
	Total Semester Credit Hours	15

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
DTG 125	Drafting for Cabinet Making II	3
FWC 111	Woodworking	7
MAT 107	Career Math	3
SOC 101	Sociology	3
	Total Semester Credit Hours	16

3rd Semester		
Course Code	Course Title	Credit Unit/ Hours
DTG 225	Drafting for Cabinet Making III	3
FWC 201	Basic Cabinet Making and Cnc	7
FRE 101	Elementary French I	3
FIW 112	Introduction to Woodworking	4
	Total Semester Credit Hours	17

4th Semester		
Course Code	Course Title	Credit Unit/ Hours
FWC 211	Advanced Cabinet Making	7
ENG 215	Business and Technical Writing ^	3
CIS 118	Intro PC Applications	3
PSY 101	Introduction to Psychology	3
FIW 101	Fundamentals of Woodworking	3
	Total Semester Credit Hours	19

DTG 123 - Drafting for Cabinet Making I: 3 Credits

This course is focused on the principles, concepts, and use of complex graphic tools utilized in the field of architecture, structural systems, and construction trades. Emphasis is placed on the application of CAD tools in the creation of floor plans, foundation plans, basic roof design, section and details, and elevation drawings. Mathematics, science, and visual design concepts are reinforced. Work-based learning strategies appropriate for this course are apprenticeship and cooperative education. Hands on experience and Skills USA/Canada leadership activities provide many opportunities to enhance classroom instruction and career development.

FIW 112 - Introduction to Woodworking: 4 Credits

Provides an introduction to woodworking based on traditional woodworking techniques and modern machinery practices to develop understanding of basic woodworking concepts and procedures. The course includes in-depth instruction of hand, power, and stationary tools and thorough instruction on the elements of design, shop drawings, and wood science.

FIW 118 - Introduction to Turning: 3 Credits

Explores the capacities of a lathe through spindle and faceplate turnings. The use of bead, cove, taper, cylindrical, v-cutslk proportion and curved line relationships are examined. Lathe components, tools, and sharpening are explored.

FIW 125 - Finishing Wood: 3 Credits

Teaches students the wide variety of finishes available from the oldest formulations to the wide array of modern films and stains. Students experiment with a representative sampling of colorations and surface finishes on a variety of wood species using a selection of application techniques.

FIW 201- Furniture I - Table Making: 4 Credits

Explores advanced wood joinery, using both hand and power tool techniques in constructing a table. This course will include two table projects. The first project will explore production style of building. The second project will be designed by the student and will focus on fine craft and design to create a table that incorporates curved elements and joinery.

Pre-requisite: Successful completion of FIW 101with a grade of "C" or better.

FIW 104 - Elements of Design: 2 Credits
Guides students in developing an approach to furniture design that will help them with either a current or future project. The class covers sketches, shop drawings, and model making.

FIW 202 - Furniture II-Carcass Construct: 4 Credits
Explores advanced wood joinery, using both hand- and power-tool techniques in frame and carcass-style construction. Students will focus on fine craft and design to create a free-standing, solid-wood cabinet.
Pre-requisite: Successful completion of FIW 201 with a grade of "C" or better

FIW 20 - Furniture III-Chair Making: 4 Credits
Explores advanced wood joinery, using both hand and power tool techniques in constructing a chair.
Pre-requisite: Successful completion of FIW 202with a grade of "C" or better.

BUS 102 - Entrepreneurial Operations: 3 Credits
Covers the major aspects of small business management to enable the entrepreneur to successfully begin his own business. This course provides the basic concepts of marketing, principles of management and finance needed to manage a small business. Further it develops the business plan and suggests methods of obtaining the financing required to launch the business.

FIW 212 - Contemporary Furniture Making: 4 Credits
Introduces students to the business of studio furniture and directs their path in designing their style of contemporary furniture. Students will create unique and meaningful designs including prototypes leading to a final piece of furniture. This course builds upon the concepts and skills learned in FIW 104 Elements of Design and FIW 201 Furniture I.
Pre-requisite: Successful completion of FIW 104 and FIW 201 with a grade of "C" or better

FIW 100 - Fundamentals of Woodworking: 3 Credits
Introduces students to the materials, drawings and tools used in the joinery, assembly, preparation and finishing of a woodworking project. The course uses a project that directs students to develop working drawings from which a furniture piece is built.

FIW 118 - Introduction to Turning; 3 Credits
Explores the capacities of a lathe through spindle and faceplate turnings. The use of bead, cove, taper, cylindrical, v-cutslk proportion and curved line relationships are examined. Lathe components, tools, and sharpening are explored.

FIW 102 - Classical Guitar Construction: 6 Credits
Create a Spanish-style, nylon string classical guitar from scratch. Beginning with raw materials, the student is expected to build a classical guitar.
Pre-requisite Successful completion of FIW 101with a grade of "C" or better

FIW 103 - Steel String Guitar Construction: 6 Credits
Create a steel string guitar from scratch. Beginning with raw materials, the student is expected to build either an OM (Orchestra Model) or a dreadnaught style steel string guitar.
Pre-requisite: Successful completion ofFIW 101with a grade of "C" or better

MAT 107- Career Mathematics: 3 Credits
Covers material designed for career technical or general studies students who need to study particular mathematical topics. Topics may include measurement, algebra, geometry, trigonometry, graphs, and/or finance. These are presented at an introductory level and the emphasis is on applications.
Pre-requisite Appropriate Math placement exam scores.

ENG 101 - English Composition I 3Credts
A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

FRE 101 - Elementary French I: 3 Credits
This course presents the fundamentals of French. Fluency in understanding, speaking, reading and writing within the context of the French society and French-speaking countries, history and culture is emphasized.

PSY 101 Introduction to Psychology 3 Credits
An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

CIS 118 - Intro PC Applications: 3 Credits
This course introduces basic computer terminology, file management, and PC system components. Provides an overview of office application software including word processing, spreadsheets, databases, and presentation graphics. Includes the use of a web browser to access the Internet.

SOC 100 – Sociology: 3 Credits
An introduction to scientific study of human social interaction with emphasis on societies, groups, organizations, social networks and communities as the units of analysis. Topics covered include culture, social structure, socialization, sex roles, groups and networks, organizations, deviance and social control, inequality and social stratification, race and ethnic relations and social institutions.

ENG 125 - Public Speaking: 3 Credits

The aim of this course is to equip students through speech planning, organization, delivery and evaluation for various extemporaneous speaking experiences which they may encounter in their professional and personal lives. This course includes speeches to inform, demonstrate, persuade and evoke emotion.

CARPENTRY TRACK, AAS (BUILDING TRADES TECHNOLOGY OPTION)

This program is intended to prepare students for careers in the building and construction trades. The general education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry into, or advancement in, today's workplace. This curriculum, following the carpentry track, provides training, skills, and knowledge that prepares students for employment as carpenters; or provides current building and construction professionals with essential carpentry skills. This curriculum, following the electrical wiring track, provides training, skills and knowledge that prepares students for employment as electricians; or provides current building and construction professionals with essential electrical wiring skills. This curriculum, following the HVAC track, provides training, skills, and knowledge that prepares students for employment as HVAC technicians; or provides current building and construction professionals with essential HVAC technician skills. HVAC track students, in order to receive the AAS, must pass the E.P.A. 608 Certification Exam and at least one Industry Competency Exam (ICE).

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BLD 130	Introduction to the Building Trades	3
BLD 133	Building Trades Blueprint Reading	3
BLD 140	Fundamentals of Carpentry	4
ENG 101	English Composition I	3
HLT 100	Principles of Healthier Living	1
	Total Semester Credit Hours	14

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BLD 230	Building Codes and Standards	3
BLD 240	Advanced Framing and Exterior Finishing	4
ENG 102	English Composition II	3
MAT 130	Elements of Mathematics I: Mathematical Reasoning and Number Systems	3
BLD 200	Special Topics in Building Trades Technology	3
	Total Semester Credit Hours	16

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
BLD 242	Remodeling and Interior Finishing	4
COM 112	Business and Professional Speech Communication	3
CMG 100	Construction Methods and Materials	3
LTP 204	Landscape Construction Methods and Estimating	3
CMG 135	Construction Field Operations	3
	Total Semester Credit Hours	16

4thSemester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
BLD 136	Construction Safety	2
ECO 201	Principles of Economics I	3
CHM 109	Chemistry and Society	4
BLD 150	Fundamentals of Electrical Wiring	4
FRE 101	Elementary French I	3
BUS 101	Introduction to Business	3
	Total Semester Credit Hours	17

HLT 100 - Principles of Healthier Living 1 Credit

A study of current health issues focused on information for making prudent personal health decisions. Course explores lifestyle wellness and preventive medicine concepts and practices. Includes mental, social, sexual, physical, and environmental health topics.

ENG 101 - English Composition I 3Credits

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

COM 112 - Business and Professional Speech Communication 3 Credits

A study of communication theory as applied to business and organizational environments. Emphasis on development of effective communication skills for professional situations including team building, interviewing, public speaking, and accommodating diverse perspectives..

FRE 101 - Elementary French I 3 Credits

A beginning language course focusing on the study of French language and culture. Students begin to develop the ability to communicate in French through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of French is required. In-class work is supplemented by 20 hours in the language learning laboratory.

CHM 109 - Chemistry and Society 3 Credits
Development of an understanding of the basic principles that are the foundations of chemistry; the significance of chemistry in our society; and the application of chemistry to environmental problems such as air and water pollution, food additives, solid waste recycling, and the energy resources of the earth. CHEM 109 and CHEM 109L must be taken concurrently.

CHM 109L - Chemistry and Society Laboratory 1 Credit
Laboratory work deals with experiments that illustrate the significance of chemistry in our society and reinforces the principles discussed in CHM 109.
Corequisite(S): CHM 109.

MAT 130 Elements of Mathematics I: Mathematical Reasoning and Number Systems 4 Credits
An examination of mathematical reasoning, problem solving, and sets. Topics include concepts and processes involving numeration systems, whole numbers, number theory, integers, and rational numbers. Intended for elementary education majors, this course is also suitable for parents of school-age children.

ECO 201 - Principles of Economics I 3 Credits
Covers macroeconomics - the study of the economy as a whole. Macroeconomics can help students make personal and business decisions and assess public policy issues throughout their lives. Topics include: supply and demand, national income and product, unemployment, inflation, aggregate supply and demand, economic growth and development, money and banking, monetary and fiscal policy, international trade, and economic systems.

BLD 130 - Introduction to the Building Trades 3 Credits
An introduction to the construction process and the professional building trades. Topics include building process, materials, building systems and components, professional trades' roles and responsibilities, career opportunities, and construction industry issues.

BLD 133 - Building Trades Blueprint Reading 3 Credits
An introduction to reading, interpreting, and applying construction drawings in the residential and light commercial building trades. Topics include drawing types, symbols and terminology, scale and dimensioning, floor plans, elevation, and mechanical and detail plans.

BLD 140 - Fundamentals of Carpentry 4 Credits
An introduction to framing and the carpentry trade. Topics include material selection and estimating; basic calculations; tools; print reading; layout; and floor, wall, and ceiling framing.

ENG 101 - Introduction to College Writing 3 Credits
An introduction to college writing. The first of two sequential freshman composition courses, this course emphasizes the process of critical thinking, reading, and writing. Student writing progresses from a personal to an academic perspective. Students write for different audiences

and purposes using a variety of rhetorical strategies. Students write in response to reading and are introduced to standard documentation procedures. Students are required to submit a final portfolio that meets department requirements.

BLD 136 - Construction Safety 2 Credits
An introduction to safety issues and standards as they relate to the construction trades. Topics include OSHA/MOSH standards and requirements, personal protection, hazardous conditions, tools and equipment, electrical safety, first aid, and workers' rights and responsibilities. Two hours each week.

BLD 150 - Fundamentals of Electrical Wiring 4 Credits
An introduction to electrical wiring and the electrical trade. Topics include material identification and selection, tools, electrical theory, switch and receptacle wiring, electrical plans reading, and electrical safety.

BLD 160 - Fundamentals of Plumbing. 4 Credits
An introduction to plumbing and the plumbing trade. Topics include material identification and selection, tools, water supply and waste systems, pipes and fittings, fixtures, plumbing plans reading, and water heaters.

CMG 135 - Construction Field Operations 3 Credits
Introduces field management from the superintendent's standpoint. Topics include job site analysis and planning, utilization of equipment, labor and material coordination, records and documentation, field scheduling, safety methods and programs, production efficiency and improvement, leadership and motivation, communications, and human relations. Site visitations and laboratory experiences supplement class discussions.

CMG 100 - Construction Methods and Materials 3 Credits
Covers the characteristics, specifications, properties, terminology, and use of construction materials. The course emphasizes principles and methods for the selection and application or installation of materials and building components rather than development and production of materials. Laboratory experiences focus on the analysis, use, limitations, testing, and practical application of selected construction materials.

BUS 101 - Introduction to Business 3 Credits
An introductory course designed to survey the field of business and its environment in order to give the student a broad overview of the principles, practices, institutions, and functions of business.

BLD 230 - Building Codes and Standards 3 Credits

An examination of building codes and standards applied to residential buildings. The International Residential Code (IRC) will be emphasized, and local area amendments will be addressed. Topics include planning and permitting, foundations, floors, walls, roofs, energy efficiency, chimneys, and fireplaces.

Pre-requisite(s): BLD 130 and BLD 133 with a grade of "C" or better.. Three hours each week.

BLD 240 - Advanced Framing and Exterior Finishing 4 Credits

A continuation of **BLD 140**, emphasizing framing and exterior finishing of residential buildings. Topics include rafter layout and roof framing, stair calculations and installation, steel framing, exterior door and window installation, and roofing and siding materials and installation.

Pre-requisite: Successful completion of BLD 140with a grade of "C" or better.

BLD 242 - Remodeling and Interior Finishing 4 Credits

A continuation of BLD 140, emphasizing remodeling and interior finishing of residential buildings. Topics include insulation, drywall installation and finishing, painting and wall coverings, cabinetry and countertops, trim and casing installation, floor finishing, tile, and remodeling techniques.

Pre-requisite: Successful completion of BLD 140. with a grade of "C" or better.

BLD 200 - Special Topics in Building Trades Technology 3 Credits

This course focuses on selected topics in building trades technology, presented as a result of technological change or new research emphasis or community or student interest. Topics may extend or specify any of the regular building trades technology course offerings. New topics appear each semester in the class schedule.

LTP 204 - Landscape Construction Methods and Estimating 3 Credits

This course is designed to provide an overview of landscape construction detail and design and its importance and value for successful implementation of landscape planning. Course content includes design and site factors, regulations and conventions, construction features and materials, design development, wood and masonry construction, and cost estimating.

Pre-requisite: Successful completion of LTP 162 with a grade of "C" or better.

FASHION APPAREL DESIGN, AAS

The Fashion Apparel Design program is designed for those students who desire a comprehensive, two-year, women's apparel design curriculum. The program encompasses fashion milestones and current trends, textile science, conceptual design, sewing and garment construction, and collection development. In their final semester, students will participate in a capstone course that includes construction of garments from start to finish and the creation of a design e-portfolio. Graduates of the program will be prepared to further their academic studies. An associate's degree in Fashion Apparel Design prepares students for careers as designers, technical designers and stylists.

Program Learning Outcomes.

- Communicate their ideas through various formats, including oral and visual presentations, written work and design.
- Identify the milestones of fashion design and how to apply this knowledge, along with consumer behaviors, current trends and future forecasting, to product and line development.
- Classify the materials of fashion design, and identify the unique attributes of natural and manmade fibers and textiles, within the context of design and sustainability.
- Construct a garment from start to finish, using techniques such as illustration, flat patternmaking and draping.
- Employ technology and computer applications to develop their designs from concept to reality.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
FAB-101	Introduction to Fashion Systems	3
FAB-110	Sewing Techniques I	3
ART-123	Life Drawing I	3
ART 124	Drawing Fundamentals	3
ENG 101	English Composition I	3
	Total Semester Credit Hours	15

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
FAB-102	Textile Science and Construction	3
FAB-112	Flat Pattern Design I	3
FAB-113	Draping I	3
FAB-210	Sewing Techniques II	3
ANT 101	Cultural Anthropology	3
ENG-102	English Composition II	3
WRT-202	Technical Writing	3
	Total Semester Credit Hours	18

3rdSemester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
FAB-212	Flat Pattern Design II	3
FAB-213	Draping II	3
FAB-230	Trend Analysis and product Development	3
ECO 181	Principles of Economics (Macroeconomics)	3
BPC110	Computer Usage and Applications	3
	Total Semester Credit Hours	15

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PSY 101	Introduction to Psychology.	3
ART 197	Computer Imaging	3
FAB 250	Design Capstone/E-Portfolio	4
FAB 231	Tech Packs: Digital Flats and Specs	3
COM 100 0r	Speech Communication	3
COM 102	Public Speaking	3
	Total Semester Credit Hours	16

FAB 101- Introduction to Fashion Systems: 3 Credits
This course provides students an overview of the multifaceted, global fashion industry, including sourcing, production, sustainability, wholesale and retail, marketing, calendar and technology. Students will also be introduced to major fashion milestones with a focus on the 19th through 21st centuries.

FAB 110 - Sewing Techniques I: 3 Credits
This course teaches the fundamentals of professional sewing and apparel construction techniques. Students learn basic cutting, sewing and finishing by hand and by machine.

ART 123 - Life Drawing I: 3 Credits
This course is an intensive study of the anatomy and structure of the human figure as rendered in pencil, brush, charcoal, and ink. Emphasis is placed upon line perspective, form, value, and space relationships.

ART 124 Drawing Fundamentals: 3 Credits
This course teaches free and schematic drawing skills necessary for advanced studio applications in the visual arts.

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II 3 Credits

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

FAB 102 -Textile Science and Construction: 3 Credits

This course is an introduction to textile science, including natural and synthetic fiber sourcing, and the variety of construction techniques. Emphasis is placed on identifying and evaluating fiber and fabric construction characteristics, correct use of terminology and determining appropriate uses in the design and construction of garments.

FAB 112- Flat Pattern Design I: 3 Credits

This course focuses on garment design through flat pattern manipulation, including basic slash and spread, and pivot methods of design development. Students use the basic slopers to create original designs.

FAB 113 Draping I: 3 Credits

This course focuses on garment design through draping on a dress form using muslin. Students learn the basics of grain, line and silhouette to create their own designs.

Pre-requisite: Successful completion ofFAB-110, ART-124with a grade of "C" or better.

COM 100 - Speech Communication: 3 Credits

This course guides students through the methods of organizing, delivering, and evaluating the spoken word in various speech situations. Intrapersonal and interpersonal communication in conjunction with public address is studied.

COM 102- Public Speaking: 3 Credits

This is a course in effective speaking in academic, workplace, and public environments which stresses organization, effective delivery, and critical listening skills. A strong emphasis is placed on student performance to help the student gain speaking practice and develop self-confidence in a variety of speaking situations.

ECO 181 - Principles of Economics (Macroeconomics): 3 Credits

Macroeconomics is concerned with the performance of the economy as a whole. In this course, the student will be introduced to an analysis of the changes in levels of income, employment, prices, and output in the economy and the role government and the central banking system play in the maintenance of overall economic growth and stability. This course is intended to serve as an introduction to a vast field of knowledge and academic endeavor.

BPC110 - Computer Usage and Applications: 3 Credits
Introduction to business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics.

PSY 101 Introduction to Psychology 3 Credits
An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

ANT 101- Cultural Anthropology: 3 Credits
This course is a comparative study of human cultures. Attention is given to the various ways in which people cope with their natural settings and their social environments and to the ways in which customs are learned and handed down from one generation to the next. Topics of discussion include the family, social change, religion and magic, economic and political systems, the arts, and urban anthropology

ART 197 - Computer Imaging: 3 Credits
This course teaches the basic principles of digital image processing and manipulation, including scanning, editing, color correction, color separations, special effects and transformation techniques. This course emphasizes the methods used to scan images from photographs, to retouch and alter these images, and to create bit-mapped illustrations.

FAB 210- Sewing Techniques II: 3 Credits
This course builds on Sewing Techniques 1, providing students with more advanced construction and finishing techniques, including sleeve insertion, pockets and closures.
Pre-requisite: Successful completion ofFAB-110, ART-124with a grade of "C" or better.

WRT 202 - Technical Writing: 3 Credits
This course is an introduction to the theory and practice of expository writing in the business, scientific, and industrial fields. Special attention is given to the writing of progress reports, sales and statistical reports, and other types of office, clinical, and scientific material.
Pre-requisite: Successful completion ofWRT-101with a grade of "C" or better.

FAB 212 - Flat Pattern Design II: 3 Credits
This course builds on FAB-112, providing students with more advanced flat patternmaking techniques. Students develop sloper variations including the two-piece sleeve, jacket and pleated pant slopers.
Pre-requisite: Successful completion of FAB 112 with a grade of "C" or better.

FAB 213 Draping II: 3 Credits

This course builds on FAB-113, providing students with more advanced draping techniques. Students develop design variations including the two=piece sleeve, jacket and pleated pant designs.

Pre-requisite: Successful completion of FAB 113with a grade of "C" or better.

FAB-230 Trend Analysis and product Development 3 Credits

This course enables students to understand, analyze and forecast fashion trends in order to successfully develop products from concept to consumer, with focus on sustainability. Students examine the fashion merchandising and marketing process, including product, price, place and promotion.

Pre-requisite: Successful completion of FAB 102with a grade of "C" or better.

FAB 231- Tech Packs: Digital Flats and Specs: 3 Credits

This course teaches students how to develop "tech packs" and garment specification sheets using manual and digital techniques such as flat garment measurement to communicate style development. An emphasis is placed on the accurate collection and communication of data for the development of first patterns, fittings, grading and production.

Pre-requisite: Successful completion of FAB 230 with a grade of "C" or better.

FAB 250 - Design Capstone/E-Portfolio: 4 Credits

This course integrates all previous coursework into a final capstone project. Students will design and present two completed garments as part of a final 10-piece women's apparel collection based on current trends, including the technical specifications needed for production. In addition, students will prepare an e-portfolio of their collection.

Pre-requisite: Successful completion of FAB 112, FAB 213, FAB 230 with a grade of "C" or better.

FASHION MERCHANDISING AND DESIGN, AAS

The Associate in Applied Science (AAS) in Fashion Merchandising and Design prepares students for entry-level positions in fashion merchandising. Students acquire a basic knowledge of textiles, clothing construction, display and visual merchandising, and the fashion industry. The program offers opportunities for students to select courses that reflect a special area of interest such as business management, advertising, or fashion illustration.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
TEC 105	Cultural Aspects of Clothing	3
TEC109	Introduction to Fashion Merchandising	3
MKT 109	Introduction to Fashion Merchandising	3
ENG 101	English Composition I	3
ASM 104	Bones, Stones, and Human Evolution	4
TEC 222	Textiles	3
	Total Semester Credit Hours	16

2nd Semester Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 102	English Composition II	3
MAT141	College Mathematics	4
MKT271	Principles of Marketing	3
MKT151	Display and Visual Merchandising	3
IBS101	Introduction to International Business	3
TEC260	Fashion Sales Management	2
	Total Semester Credit Hours	17

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
TEC111	Intermediate Apparel Construction	3
TEC 255	Fashion Retail Merchandising	3
COM110	Interpersonal Communication	3
ACC109	Accounting Concepts	3
CRE 111	Critical Reading for Business and Industry	3
ARH100	Introduction to Art	3
	Total Semester Credit Hours	18

4thSemester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
MGT251	Human Relations in Business	3
MGT253 -	Owning and Operating a Small Business: II.	3
MKT101	Introduction to Public Relations	3
MKT263	Advertising Principles	3
MGT101	Techniques of Supervision	3
MKT 200	Retail Buying	3
	Total Semester Credit Hours	18

TEC 105 - Cultural Aspects of Clothing: 3 Credits
Psychological, aesthetic, and economic factors applied to the systematic study of dress and adornment in relationship to world cultures and the global fashion industry.

TEC 222 – Textiles: 3 Credits
Study of textile fibers, yarns, fabrication, color and finishes and their impact on product performance. Includes labeling laws, fiber manufacturing processes, technical textiles, fiber properties, care, end use, and global sustainability efforts.

MKT 109 - Introduction to Fashion Merchandising: 3 Credits
Explores the various levels and specialized segment of the fashion industry, the principles of fashion, the fundamentals of merchandising apparel, consumers' influence on demand and marketing activities.

ENG 101 - English Composition I 3 Credits
A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

ASM 104 - Bones, Stones, and Human Evolution: **4 Credits**

Study of human evolution and variation; including fossil hominids and their tools, primate anatomy and behavior, human genetics, and the environment and human biology.

AGS164 - Plant Growth and Development: **4 Credits**

Principle of growth in relation to seed germination, emergence, growth and reproduction processes of plants and the environmental influences on plant growth processes.

MAT 141- College Mathematics: **4 Credits**

Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include proportional reasoning, modeling, finance, probability, and statistics.

MKT 151- Display and Visual Merchandising: **3 Credits**

An examination of the principles of design including line, color, balance, and texture as they relate to the display of merchandise. Participation in displays, field trips, and individual projects.

TEC 111-Intermediate Apparel Construction: **3 Credits**

Intermediate clothing construction techniques. Emphasis on fit and construction details of commercial patterns.

Pre-requisites: Successful completion ofTEC110 with a grade of C or better or permission of Instructor.

COM 110 - Interpersonal Communication: **3 Credits**

Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships.

ACC 109 - Accounting Concepts: **3 Credits**

Introduction to accounting with emphasis on analysis and applications of financial information.

CRE 111- Critical Reading for Business and Industry: **3 Credits**

Critical Reading for Business and Industry Emphasis on reading skills required for success in business and technology. Includes interpretation of technical and professional materials with an emphasis on critical analysis and reading.

MGT 101-Techniques of Supervision: 3 Credits
Overview of the foundations of supervision and how to get things done within an organization through other people. The functions of planning, organizing, staffing, motivating and controlling presented.

MKT 101-Introduction to Public Relations: 3 Credits
Emphasizes public relations techniques used both within and outside the business organization, including operation of a PR counseling firm.

TEC 103 - Developing Your Fashion Business: 2 Credits
Creating and understanding a financial plan, developing operating and control systems, planning growth strategies and a business plan for the Fashion Entrepreneur. Emphasis on fashion merchandise and successful fashion business development.

IBS 101-Introduction to International Business: 3 Credits
A basic overview of international business to introduce students to international trade concepts. Focus of the course is on international business environment issues that influence global business practices, decisions and applications.

GBS 151-Introduction to Business: 3 Credits
Characteristics and activities of current local, national, and international business. An overview of economics, marketing, management and finance.

ARH 100 -Introduction to Art: 3 Credits
Understanding and enjoyment of art and visual culture through study of two-dimensional and three-dimensional works of art, design elements, media and processes, and cultural contexts. Emphasis on contemporary topics and cultural diversity in the arts. Prerequisites: None.

TEC 255 - Fashion Retail Merchandising: 3 Credits
This course is ideal for students who are interested in the management and retail side of the industry - such as retail management, buying, public relations, and product development - or those who want an insight into starting a fashion business**.**

MKT 271- Principles of Marketing: 3 Credits
An analysis of the marketing process and environment with regard to the product, pricing, distribution, and communication in order to satisfy buyer needs.

MGT 251- Human Relations in Business: 3 Credits
Analysis of motivation, leadership, communications, and other human factors. Cultural differences that may create conflict and affect morale individually and within organizations.

MGT253 - Owning and Operating a Small Business II: 3 Credits
Analysis of the Business Starting, organizing, and operating a small business, including location, finance management processes, advertisement and promotion, credit, inventory control and ethics

MKT 263 - Advertising Principles: 3 Credits
Introduces the advertising function within business, including media study, creative strategies, and advertising campaigns.

MKT/TEC 200 - Retail Buying: 3 Credits
Studies an overview of retail merchandising, including buying, pricing, selling, advertising, sales promotion and display principles.

TEC 260 -Fashion Sales Management: 3 Credits
The Course in Fashion Business Management covers entire gamut of the business of fashion, and provides you with an exclusive knowledge-based experience to understand problem solving skills, strategic planning, decision making, leadership, organizational goals and competitive global market study.

TEC 272 - Retail Merchandising Internship: 1 Credit
Retail Merchandising work experience in a Fashion Retail business or industry. Supervision and evaluation by an internship coordinator. Eighty hours of designated work, per credit per semester.
Pre-requisites: Completion of at least twelve (12) college credits,

FASHION MERCHANDISING & MARKETING, AAS

The Associate of Applied Science (A.A.S) program in Fashion Merchandising and Marketing features an integrated, career-focused curriculum in such categories as Fashion Apparel/Accessories, Home/Garden, and Gifts. Through professional courses and a focused approach, where four themes are designed into the program (industry foundations, the customer and customer experience, product and promotion, and the digital frontier and future industry directions), students gain the knowledge and skills necessary to pursue career opportunities in Fashion Retail and Fashion Marketing.

Students will have the opportunity to gain professional experience through the NAAC Retail operation as well as by participating in community projects in various shopping zones. Students will graduate with the equivalent of 1-2 years of retail experience.

STUDENT LEARNING OUTCOMES:
Upon successful completion of this program, students will be able to:
- Articulate and discuss the foundation of the integrated fashion industry.
- Apply fashion industry knowledge to solve problems and justify decisions.
- Demonstrate proficiency or mastery in soft skills necessary for success in any fashion career.
- Demonstrate proficiency or mastery in Marketing as it relates to the fashion industry.
- Demonstrate proficiency or mastery in Merchandising as it relates to the fashion industry.

- Apply fashion merchandising and fashion marketing concepts through hands-on experiences, including a retail lab, shopping zone field experiences, and in-class professional projects.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 101	English Composition I	3
BUS 101	Navigating Leadership and Business Professions	3
EAS 111	Environmental Conservation	3
FMM 101	Survey of the Fashion Industry	3
FMM 105	Textiles	3
FMM 110	Introduction to Work Experience	1
	Total Semester Credit Hours	16

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CIS 103 -	Computer Applications & Concepts	3
FNM 121 -	Retail Mathematics & Merchandising	3
FMM 115 -	Understanding the Customer	3
FMM 120 -	Professional Personal Selling	3
FMM 125 -	Experiential Retail	3
FMM 130 -	Work Experience I	2
	Total Semester Credit Hours	17

3rd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 102	English Composition II	3
ART 150	Introduction to Computer Art/Graphics	3
FMM 135	Fashion Product Promotion	3
FMM 140	Buying & Private Label Development	3
FMM 145	Work Experience II	2
	Total Semester Credit Hours	14

4th Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 116	Interpersonal Communication	3
ECO 181	Principles of Economics (Macroeconomics)	3
PHO 105	Introduction to Digital Photography	4
FMM 150	- Material Directions	3
FMM 155	Digital Commerce	3
FMM 160	Work Experience III	2
	Total Semester Credit Hours	18

ENG 101 - English Composition I **3 Credits**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

BUS 101 - Navigating Leadership and Business Professions: **3 Credits**

This course introduces first-year students in business and professional programs and related fields to success strategies for self-leadership and college-level academic inquiry, including career planning, problem solving, critical thinking, communication, cultural competence, working within teams, and institutional knowledge. Students create a comprehensive personal leadership plan, including academic, financial, and career/transfer components.

EAS 111 - Environmental Conservation: **3 Credits**

Introduction to the many serious environmental problems facing the world today, the extent and causes of these problems and the kinds of solutions being proposed. Topics include ecological systems, population, land management, hunger and food production, energy supplies, waste management and environmental pollution. The course is organized around the theme of our relationship to the environment.

FMM 101 - Survey of the Fashion Industry: **3 Credits**

Introduces the materials and methods used to design, develop, and market the fashion product, including current vocabulary and foundation of knowledge about industry practices and career opportunities.

FMM 105 – Textiles : 3 Credits

Examines the global textile manufacturing industry and the fundamental processes involved in producing natural and man-made fibers and fabrics as they relate to fashion product design and merchandising. Includes basic terminology and production processes as well as selection and evaluation of fabrics based on aesthetics, performance and care characteristics.

FMM 110 - Introduction to Work Experience 1 Credit Hours: 1 Credit

Students are introduced to information, strategies, and skills, including employer expectations, business communications, interview skills, and other soft skills that enable them to succeed in the workplace.

Pre-requisite: Successful completion of FMM 101with a grade of "C" or better.

CIS 103 - Computer Applications & Concepts: 3 Credits

This course is an exploration of modern computer technology used for communication, collaboration, problem solving, decision making, and increasing personal productivity. Topics covered include word processing, electronic spreadsheet, presentation, and database management software; collaboration and networking software; the Internet of Things; and ethical issues related to technology. This is a Windows based hands-on course.

FNM 121 - Retail Mathematics & Merchandising: 3 Credits

Students learn the essential concepts, practices, and quantitative skills necessary for retail planning, buying, and selling. This course covers mathematical topics that pertain to students who are pursuing careers in Fashion Merchandising. These topics include profit and loss statement, retail pricing of merchandise, markups, markdowns, the retail method of inventory, six-month planning, and assortment planning. Students learn the various financial tools that retailers use to evaluate performance. Students will simulate buying decisions and learn how to use technology to assist in retail management.

Pre-requisite: Successful completion of FNM 017 or FNM 118 with a grade of "C" or better.

FMM 115 - Understanding the Customer: 3 Credits

Applies contemporary behavioral science and buying psychology to consumer behavior and decision-making. The process of building customer profiles and the relationship between the efforts of business firms in marketing their products and the reactions of ultimate consumers are examined.

Pre-requisite: Successful completion of FMM 101 with a grade of "C" or better.

FMM 120 - Professional Personal Selling: 3 Credits

This course prepares students for a professional sales career. Using role-playing and experiential exercises, students learn the latest strategies and tactics in identifying customer needs, building personal relationships, staying abreast of market trends and offering solutions, and exploring Customer Relationship Management (CRM).

Pre-requisite: Successful completion of FMM 101 with a grade of "C" or better.

FMM 125 - Experiential Retail: 3 Credits

Examines brick & mortar retail operations, including understanding how trends in consumption, past, present, and future, determine a retailer's strategy and how the customer is enticed to enter, stay and buy.

Pre-requisite: Successful completion of FMM 101 with a grade of "C" or better.

FMM 130 - Work Experience I: 2 Credits

Students apply knowledge and skills through internship opportunities for the FMM retail laboratory, supporting the online and pop-up shops and special projects for industry and community partners. Examples include: various forms of research, data collection and analysis related to retail and marketing in a partner shopping zone, FMM Retail shop operations, product procurement, marketing, visual merchandising, product and marketing photography and graphics, sales, sales fulfillment. Students also program information review for the NRF Customer Service and Sales Certification, participate in practice tests, and pursue the certification option.

Pre-requisite: Successful completion of FMM 110 with a grade of "C" or better.

ART 150 - Introduction to Computer Art/Graphics: 3 Credits

Basic introduction to the language, technology and artistic medium of computer graphics. Course format is essentially studio/lab in nature, with instruction and demonstration preceding hands-on equipment use.

FMM 135 - Fashion Product Promotion: 3 Credits

This course examines the global aspects of product promotional strategies through the examination of the economic, political, and social/cultural trends of today's globalized marketplace. Various national and international regions are analyzed in terms of their market characteristics and current retail environment. Students research market information and analyze opportunities regarding merchandise positioning and brand imagery toward the development of a comprehensive promotional plan.

Pre-requisite: Successful completion of FMM 105 and FMM 115 with a grade of "C" or better.

FMM 140 - Buying & Private Label Development: 3 Credits

Provides a working knowledge of merchandise planning, flow, and distribution in the retail setting. Covers profitable merchandise and assortment planning and control, in both conceptual and technical formats. Final project incorporates six-month financial, classification, and assortment planning. Apparel Management functions that exist between the merchandising, design, production and promotion elements of the apparel supply chain are examined.

Pre-requisite: Successful completion of FMM 105, FMM 115, FMM 125, FNM 121 or FNM 118 with a grade of "C" or better.

FMM 145 - Work Experience II: 3 Credits

Students continue to accumulate information, strategies and soft skills that enable them to succeed in the workplace. Students apply knowledge and skills through internship opportunities for the FMM retail laboratory, supporting the online and pop-up shops and special projects for industry and community Partners. Examples include: various forms of research, data collection and analysis related to retail and marketing in partner shopping zone, FMM Retail shop operations, product procurement, marketing, visual merchandising, product and marketing photography and graphics, sales, sales fulfillment. Students will synthesize program information as they study for the NRF Advanced Customer Service and Sales Certification, participate in practice tests and pursue the certificate option.

Pre-requisite: Successful completion of FMM 110 and FMM 130 with a grade of "C" or better.

ENG 116 - Interpersonal Communication: 3 Credits

Provides theory and skills needed to increase communication competence in family life, social situations and professional careers. Study of human perception, nonverbal behavior, language, effective listening, relationships and conflict management.

Pre-requisite: Successful completion of ENG101with a grade of "C" or better., which may be taken concurrently.

ECO 181 - Principles of Economics (Macroeconomics): 3 Credits

Macroeconomics is concerned with the performance of the economy as a whole. In this course, the student will be introduced to an analysis of the changes in levels of income, employment, prices, and output in the economy and the role government and the central banking system play in the maintenance of overall economic growth and stability.

PHT 105 - Introduction to Digital Photography: 4 Credits

This course is an introduction to digital photographic technique and the aesthetics of photography. Through a series of practical demonstrations and shooting assignments, the course provides students with an overview of digital camera operation, digital imaging principles, techniques in composition and aesthetics, and a foundation in photography that will prepare students for more advanced courses and career opportunities in photography.

FMM 150 - Material Directions: 3 Credits

The course examines the area of non-woven textiles and other material applications and innovations and emphasizes the practical relationship between product design, the manufacturing industry, and the technical considerations that influence the choice of material and process for small batch and mass production in the fashion apparel, accessory, and gift product industry.

Pre-requisite: Successful completion of FMM 105 with a grade of "C" or better.

FMM 155 - Digital Commerce: 3 Credits

Students examine and analyze past, current, and future trends in ecommerce technologies that primarily support the back end inventory, logistics and front end operations of the fashion apparel, accessory, and home products industries. Using the Retail Laboratory, students synthesize the knowledge and skills that they've learned throughout the program as they master strategy implementation, evaluation, and revision across the product procurement and sales functions in the online store platform and integrate the concepts into the pop-up physical store.
Pre-requisites: Successful completion of FMM 135, FMM 140, ECO 181 with a grade of "C" or better.

FMM 160 - Work Experience II: 12 Credits

Students apply knowledge and skills through internship Students continue to accumulate information, strategies and soft skills that enable them to succeed in the workplace. Students apply knowledge and skills through internship opportunities for the FMM retail laboratory, supporting the online and pop-up shops and special projects for Industry and Community Partners. Examples include: various forms of research, data collection and analysis related to retail and marketing in partner shopping zone, FMM Retail shop operations, product procurement, marketing, visual merchandising, product and marketing photography and graphics, sales, sales fulfillment. Students will master program information as they study for the NRF Retail Industry Fundamentals Certification, participate in practice tests and pursue the certificate option.
Pre-requisites: Successful completion of FMM 110, FMM 130, and FMM 145 with a grade of "C" or better.

FIBER, TEXTILE AND WEAVING ARTS, AAS

This educational program is designed to prepare students creatively and technically to express ideas, emotions, or inner visions by constructing art works from woven or non-woven fabrics and fibrous materials. This program includes in depth instruction in weaving techniques and loom operation; quilting; non-woven techniques such as knitting, netting, coiling, and crocheting; printing and other finishing techniques; dyeing and pigmentation; tapestry; pattern design; and personal style development.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CHM 101	Chemistry – Molecular	3
CHM 102	General Chemistry Lab.	1
ENG 101	English Composition I	4
MAT 131	Calc for Life & Mgmt. Sci.	3
TET 105	Intro to Textile Technology	3
TET 101	Introduction to the College of Textiles	1
	Total Semester Credit Hours	15

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
MAT 231	Calculus for Life and Mgmt. Sci.	3
MAT 132	Comp Math for Life & Mgmt.	1
PHY 211	College Physics I	4
TMS 211	Intro to Fiber Science	3
FTM 217	Business of Textiles	3
HES 111	Fitness and wellness	1
	Total Semester Credit Hours	15

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
EC0 205	Fund of Economics	3
PHY 212	College Physics II	4
TET 200	Poly Sci & Engr	3
TET 327	Yarn Prod & Properties	4
TET 380	Mgt & Ctrl Text & App Syst	3
	Total Semester Credit Hours	17

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
STA 311	Intro to Statistics	3
PSY 101	Introduction to Psychology	3
TET 351	Woven Fabric Technology	3
TET 341	Knitted Fabric Technology	3
CIS 100	Introduction to Computer Information Systems	3
	Total Semester Credit Hours	15

CHM 101 - General Chemistry I: 3 Credits

This is the first of a sequence of courses in fundamental principles of chemistry. Topics include atomic and molecular structure, nomenclature, formulas and equations, common substances and reactions, stoichiometry, states of matter, solutions, and equilibria.

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

HES 111 Fitness and wellness **1 Credit**

Fitness and wellness courses focus on the fundamentals of health-based fitness, encompassing cardio respiratory fitness, muscular strength, muscular endurance, muscular flexibility, and body composition. Students will apply these fundamental fitness principles in a variety of activities depending on the selected course

CIS 100 - Introduction to Computer Information Systems: **3 Credits**

This course covers fundamental computing concepts that are part of the digital age including software, hardware, data, people, procedures, security and ethics. The course centers on educating today's technology consumer using themes of ethics, the Internet, and communications to demonstrate how the changing world of technology influences our lives and the decisions we make.

PSY 101 Introduction to Psychology **3 Credits**

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

CHS 102 Personal Health and Wellness **1 credit**

This course will cover the components of wellness and of lifelong tools that will help enhance wellness. students will explore health values, attitudes, and behaviors of self and others. Topics will also include the design and execution of personal health and wellness plans.

TET 101- Introduction to the College of Textiles: 3 Credits

Introduction topics related to the College of Textiles, the textile industry, all textile curricula, advising, academic skills, team work, research and personnel involved in the college.

MAT 131- Calculation for Life and Management Science A 1 **2:** 4 Credits

Topics include straight line, conic sections, inequalities, functions and graphs, including trigonometric, exponential and logarithmic functions; limits and continuity; differentiation of algebraic and transcendental functions; maxima/minima theory; related rates; differentials. Computer based labs are an integral part of the course.

MAT 132- Computer Mathematics for Life and Management A 1: 3 Credits
Topics include symbolic logic, set theory, and probability theory applied to the analysis of business and social science problems.

TET 15I- Introduction to Textile Technology: 3 Credits
Introduction to Textile and Apparel, Technology and Management. Structures and production methods for fabrics, yarn, and fibers. Introduction to the nature of polymers and the characteristics of polymers which make them useful for producing fibers that are practically and aesthetically desirable. Design of end products as well as fundamental economic and supply chain issues.

MAT 231- Calculus for Life and Management Sciences B: 3 Credits
Functions of several variables - partial derivatives, optimization, least squares, Lagrange multiplier method; differential equations - population growth, finance and investment models, systems, numerical methods.
Pre-requisite: Successful completion of MAT 131 or MAT 141with a grade of "C" or better**.**

TMS 211- Introduction to Fiber Science: 3 Credits
Properties of fibers are related to their classification, chemical structure, type and origin- which helps with their identification and classification. Covered in this course are principles of fiber formation and the physical behaviors of fibers (including their mechanical, thermal, optical, frictional, electrical, and moisture management properties), and methods of measuring the physical properties of fibers. Relationships between polymer structure, fiber properties and utilization are explored. Also, students are introduced to tools that will help them reflect on how problems related to fiber science are solved.

FTM 217- The Textile Industry: 3 Credits
Overview of the global textile complex, from raw material through consumption. The course includes scope and structure of the global textile complex, identification of key global leaders (companies) in each sector, business terminologies and concepts, the role of global trade, and career opportunities.
Pre-requisites: Successful completion of TET 105 with a grade of "C" or better.

TET221-Yarn Production and Properties I: 2 Credits
The techniques available for manufacturing yarns from staple fibers. A review of yarn numbering and fiber properties. The principles involved in opening, cleaning, blending, drafting, twisting and winding. Short and long staple spinning systems including a review of opening and cleaning lines, carding, draw frames, roving frames and different spinning machines. Filament yarn processing.
Pre-requisite: Successful completion of TET 105 or MT 105with a grade of "C" or better.

TET 251-WovenProductsandProcesses 3Credits

Design and development of various woven textile products including their component properties, performance, requirements, structures, and methods of production. The primary objective of the course is to introduce students to various woven textile products, including those used in automotives, agriculture, construction, ETC. and stimulate understanding of their structure, performance requirements, and relevant manufacturing principles including braiding.
Pre-requisite: Successful completion of TET 221 or TET 227with a grade of "C" or better.

TET241-KnittedFabricTechnology 3Credits

Review of knitted fabric production techniques. Technology of more advanced weft and warp knitting. Jersey and rib fabric modification techniques, yarn knitability and productivity, yarns, creels, patterning and machinery developments, manufacture and properties of warp knit fabrics such as mesh, laid-in, weft insertion and plush. Quality measures, measurement and standards, defects and problem solving. Management of knitting operations.
Pre-requisite: Successful completion of TET 221 or TET 227 with a grade of "C" or better.

TET280-Management and Control of Textile and Apparel Systems: 3Credits

Management approaches, practices and basic economic considerations in the development, production and distribution of industrial and consumer textile and apparel products.
Pre-requisite: Successful completion of FTM 217 with a grade of "C" or better.

PHY 211- College Physics I: 4Credits

Teaches fundamental principles of physics. Covers mechanics, thermodynamics, wave phenomena, electricity and magnetism, and selected topics in modern physics.

FTM 217- The Textile Industry: 3 Credits

Overview of the global textile complex, from raw material through consumption. The course includes scope and structure of the global textile complex, identification of key global leaders (companies) in each sector, business terminologies and concepts, the role of global trade, and career opportunities.

EC0 205 -Fund of Economics: 3 Credits

In this introductory class the student is introduced to the basic tools and concepts used in modern economics. In particular, the course introduces the use of graphs, the importance of scarcity, the basic facts of the U.S. economy, the measurement of economic activity, the role of prices, supply and demand, and more. Time - permitting the course will briefly examine current economic conditions and policy debates.

PHY 212 - College Physics II: 3 Credits

This is a calculus-based physics course covering electricity, magnetism, optics and waves. Students will study electric and magnetic fields, the motion of charged particles, and the function of simple electric circuits.

STA 211- Intro to Statistics: 3 Credits

Statistics is about extracting meaning from data. In this class, we will introduce techniques for visualizing relationships in data and systematic techniques for understanding the relationships using mathematics.

TEXTILE/SURFACE DESIGN, AAS

The major in Textile/Surface Design offers qualified students the opportunity to prepare for careers in the fabrics, fashion, home furnishings, and related industries as designers, colorists, stylists, and studio directors, as well as freelance entrepreneurs. Graduates of this program are eligible to apply for admission to the Bachelor of Fine Arts programs in Fabric Styling and Textile/Surface Design, and the Bachelor of Science program in Textile Development and Marketing

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
TSD 112	Textile Color Fundamentals	2
TSD 113	-Textile Surface Design: Styles Sources	2
TSD 126	Textile Design Studio Practices	3
TSD 141	Nature Studies	1.5
MAT 142	Geometry and the Art of Design	3
SCI 147	The Forensics of Fiber Analysis	3
	Total Semester Credit Hours	14.5

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
TSD 114	Computer Aided Print Design	3
TSD 138	Introduction to Woven Design	2.5
TSD 251	Techniques for Decorative Fabrics and Surfaces	3
TSD 111	Fundamentals of Textiles	3
NET 203	Your Digital Life: Online Literacies for a Networked World	3
FAS 237	Global Fashion: Ancient Origins to Modern Styles	3
	Total Semester Credit Hours	17.5

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
TSD 161	Fundamentals of Screen Printing	2
TSD 238	Woven Design and CAD	3
TSD 271	Textile/Surface Design Using Adobe Illustrator	2
ECO 141	Macroeconomics	3
BUA 261	Starting a Small Business	3
CDE 123	Basic Bookbinding	1.5
	Total Semester Credit Hours	14.5

4thSemester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
TSD 202	Advanced Professional Practices	3
TSD 206	Advanced Home Textiles	2
TSD 262	Advanced Screen Printing	3
COM 242	Public Speaking	3
HIS 112	History of Western Art and Civilization: Renaissance to the Modern Era	3
FAT 131	Life Drawing I	1.5
	Total Semester Credit Hours	15.5

TSD 112 — Textile Color Fundamentals 2 Credits

Introduction to traditional color theories and systems through comparisons and analysis. Color experimentation for use in textile fashion and home furnishing fabrics is developed in opaque water colour (gouache).

TSD 113 — Textile Surface Design: Styles & Sources 2 Credits

An introduction to the design styles, design vocabulary, and research methods necessary for creating original textile surface designs. Through image-based lectures, discussions, museum visits, design projects, and presentation critiques, students explore themes in fashion and the applied arts that will serve as a foundation in their future design work.

TSD 126 — Textile Design Studio Practices 3 Credits

Students develop original design concepts for apparel fabrics painting with gouache and dye. Trend information and references from a variety of sources is researched and analyzed for design inspiration. Technical and design related aspects of printing, layout, repeat and color according to industry standards is examined and applied.

TSD 141 — Nature Studies **1.5 Credits**

Study of design in nature as a source of inspiration for textile design. Students analyze growth and structure of plants and other forms of nature using live flowers and marine life as models for drawing and painting in representational techniques.

TSD 114 — Computer Aided Print Design **3 Credits**

Computer-aided design software skills and techniqus are applied to create original textile designs. Based on current market trend research, students create digital designs using a variety of layouts, repeats and seasonal palettes. They produce visualizations of their designs and printed presentations for their portfolio.

TSD 138 — Introduction to Woven Design **2.5 Credits**

This introductory course provides students an opportunity to create fabrics for apparel, home fashion, accessories and fine art. Hand looms are used to introduce weave structure, color and texture. Students translate ideas into original designs in the medium of weaving.

TSD 251 — Techniques for Decorative Fabrics and Surfaces **3 Credits**

A focus is placed on the design aspects, techniques and technical requirements of home furnishings, decorative fabrics and surfaces. Large-scale layouts, research sources and current trending information are used in the creation of original designs. Students experiment with a variety of art materials and mixed media techniques including finishes, textures and embellishments to create original designs and simulate effects from design references.
Pre-requisite: Successful completion of TSD 126 or TSD 115with a grade of "C" or better.

TES 111 — Fundamentals of Textiles **3 Credits**

General study of textile materials with an emphasis on the factors that produce successful fabrics in the marketplace, including fibers, yarns, construction, color, and finish. Characteristics of a wide range of market fabrics are examined.

TSD 161 — Fundamentals of Screen Printing **2Credits**

Screen printing is the most widely used technique for printing in the textile industry. This course introduces the process of screen printing as both a commercial application and a creative medium. Students use imagery, drawing style, coloran placement to produce original textile designs. Manual and digital techniques are applied to create artwork and print designs in repeat.

TSD 238 — Woven Design and CAD **3 Credits**

Students are introduced to the computer process for designing woven using proprietary weaving software. Hand woven collections are developed using complex harness structures. Trend analysis is used to inspire collections.
Pre-requisite: Successful completion of TSD 138with a grade of "C" or better.

TSD 271 — Textile/Surface Design Using Adobe Illustrator 2 Credits
Students learn to use Adobe Illustrator for application to textile and surface design and gain proficiency in working between Adobe Illustrator and Adobe Photoshop. Target markets and the creative use of software for portfolio development are emphasized.
Pre-requisite: Successful completion of TSD 114 or TSD 224with a grade of "C" or better.

TSD 202 — Advanced Professional Practices 3 Credits
Students develop original designs and coordinates using design trends as inspiration. A stronger awareness of the textile/surface design industry is established via lectures, demonstrations and market visits,. Preparation of student portfolios and professional presentation is emphasized.
Pre-requisite: Successful completion of TSD 126with a grade of "C" or better.

TSD 206 — Advanced Home Textiles 2Credits
In this advanced course design for bedding will be discussed with an emphasis on producing industry standard CAD files from hand painted artwork using Adobe Photoshop and Illustrator. Through research and personal design inspiration, students will create bedding collections. The technical aspects of working with large-scale layouts in CAD, repeat sizes, engineered prints, and technical sketches and tech packs will be explored to help students integrate CAD industry standard practices using hand painted designs into their workflow.
Pre-requisite(s): Successful completion of TSD 155 or TSD 251with a grade of "C" or better.

TSD 262 — Advanced Screen Printing 3 Credits
Emphasizing the development of personal style and professionalism in a modern screen printing environment, this course explores advanced methods of desiging and printing yardage fabric. Students choose a market and produce a collection of autographically or digitally produced designs printed in repeat and in multiple color ways.
Pre-requisite: Successful completion of TSD 161with a grade of "C" or better.

MAT 142 — Geometry and the Art of Design 3 Credits
A contemporary primer of geometric topics that expand the concepts of shape and space, this course presents some of the established and emerging ways geometry can provide tools and insights for artists and designers. Included are a variety of visual phenomena such as fractals, knots, mazes, symmetry, and the golden ratio.

NET 203 — Your Digital Life: Online Literacies for a Networked World 3 Credits
Students will explore topics from the digital humanities, conceptualizing and developing digital projects using a variety of technologies to promote their progress as students, engaged citizens, and critical thinkers. Students will engage in researching, curating, filtering, and navigating information streams to become networked learners and communicators.
Pre-requisite: Successful completion of NET 121with a grade of "C" or better or equivalent.

FAS 237 — Global Fashion: Ancient Origins to Modern Styles 3 Credits
Survey of elite and everyday fashion in Africa, the Americas, Asia and Oceania from ancient origins to the 20th century. This course offers a geographical overview of global styles of adornment and dress, including cross-cultural connections and exchange, focusing on the aesthetics and making of dress and its representation in art.

ECO 141 — Macroeconomics 3Credits
Introduction to basic principles and characteristics of economic systems. Primary emphasis is on macroeconomic issues, including national income determination, monetary and fiscal policy, and current economic problems.

SCI 147 — The Forensics of Fiber Analysis 3 Credits
This course focuses on the fundamental concepts in forensic science by examining sample evidence collected from mock crime scenes. Chemical and spectroscopic techniques are used to introduce the concepts of forensic fiber analysis.

COM 242 — Public Speaking 3Credits
Covers all major aspects of speech preparation, such as formulating purpose statements, analyzing and adapting to audiences, organizing and outlining ideas, assessing evidence and reasoning, and using language effectively. The study of various areas of speech presentation--such as vocal and nonverbal communication and use of appropriate visuals--complement preparation. Students give a variety of informative and persuasive presentations, which are videotaped and analyzed by the students and the instructor.
Pre-requisite: Successful completion of ENG 121 with a grade of "C" or better

HIS 112 History of Western Art and Civilization: Renaissance to the Modern Era3Credits
Presents the history of Western art and civilization from the early Renaissance to the modern era. Illustrated lectures explore painting, sculpture, and architecture in relation to pertinent religious, political, economic, and social conditions.

BUA 261 — Starting a Small Business 3 Credits
Investigates the problems and challenges of opening and managing a small business. Emphasis is placed on analysis of financial statements and on developing a business plan.

CDE 123 — Basic Bookbinding 1.5Credits
Students work hands-on to create book structures. Different bookbinding methods are explored, such as non-adhesive structures, accordions, sewing, and case-bound books, with an emphasis on craft and the proper use of materials.

FAT 131 — Life Drawing I 1.5 credits
An introduction to drawing the figure, students study line, proportion, gesture, and composition using pencil and charcoal. Study of anatomy is introduced.

WELDING TECHNOLOGY, AAS

The Nubian American Advanced College (NAAC) Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and non-destructive testing provides the student with industry-standard skills developed through classroom training and practical application.

Graduates of the Welding Technology Program may be employed as entry level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
WLD 143	Welding Metallurgy	2
MAT 108	Technical Mathematics	4
WLD 110	Cutting Processes	2
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
	Total Semester Credit Hours	15

2ndSemester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
COM 110	Introduction to Communication	3
ENG 101 -	English Composition I	3
WLD 116	SMAW (stick) Plate/Pipe	4
WLD 121	GMAW (MIG) FCAW/Plate	4
WLD 131	GTAW (TIG) Plate	4
	Total Semester Credit Hours	18

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
BPR 111	Print Reading	2
WLD 122	GMAW (MIG) Plate/Pipe	3
WLD 132	GTAW (TIG) Plate/Pipe	3
WLD 141	Symbols & Specifications	3
WLD 151	Fabrication I	4
PHL 101	Ethics and Social Issues	3
	Total Semester Credit Hours	18

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PSY 118	Interpersonal Psychology	3
WLD 215	SMAW (stick) Pipe	4
WLD 231	GTAW (TIG) Pipe	3
WLD 251	Fabrication II	3
WLD 262	Inspection & Testing	3
	Total Semester Credit Hours	16

ENG 101 - English Composition I 3Credits

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

COM 110 Introduction to Communication 3 Credits

This course offers an introduction to the concepts and theories of communication, and then asks students to apply those concepts and theories to interpersonal interactions, small group processes, and public addresses. Through participating in the course, students will recognize the importance of communication's relevance to everyday life, and the importance of critically examining and celebrating diverse voices.

PSY 118 Interpersonal Psychology 3 Credits

This course introduces the basic principles of psychology as they relate to personal and professional development. Emphasis is placed on personality traits, communication/leadership styles, effective problem solving, and cultural diversity as they apply to personal and work environments. Upon completion, students should be able to demonstrate an understanding of these principles of psychology as they apply to personal and professional development.

PHL 101 Ethics and Social Issues 3 Credits

Moral controversies that divide society today, such as abortion, the death penalty, affirmative action, sexism, nuclear deterrence. Emphasis is on identifying the relevant values and moral principles underlying competing views and subjecting them to rational assessment.

MAT108 – Technical Mathematics 4 Credits

Covers mathematical material designed for career and technical students. Topics include measurement, algebra, geometry, trigonometry, and vectors. These are presented at an introductory level and the emphasis is on applications.

WLD 110 - Cutting Processes 2 Credits

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

WLD 115 - SMAW (Stick) Plate 5 Credits

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

WLD 121 - GMAW (MIG) FCAW/Plate 4 Credits

This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WBL 112 - Work-Based Learning I 2 Credits

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 122 - Work-Based Learning II **2 Credits**

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WLD 112 - Basic Welding Processes **2 Credits**

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

WLD 151 - Fabrication I **4 Credits**

This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, cutting, joining techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipmen.t

WLD 131 - GTAW (TIG) Plate **4 Credits**

This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 141 - Symbols & Specifications **3 Credits**

This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

BPR 111 - Print Reading **2 Credits**

This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

WLD 116 - SMAW (stick) Plate/Pipe **4 Credits**

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.
Pre-requisite: Successful completion of LD 115with a grade of "C" or better.

WLD 122 - GMAW (MIG) Plate/Pipe 3 Credits

This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry.

Pre-requisite: Successful completion of WLD 121with a grade of "C" or better.

WLD 132 - GTAW (TIG) Plate/Pipe 3 Credits

This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

Pre-requisite: Successful completion of WLD 131with a grade of "C" or better

WLD 143 - Welding Metallurgy 2 Credits

This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

WLD 215 - SMAW (stick) Pipe 4 Credits

This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions.

Pre-requisite: Successful completion of WLD 115 or WLD 116with a grade of "C" or better.

WLD 231 - GTAW (TIG) Pipe 3 Credits

This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions.

Pre-requisite: Successful completion of **WLD** 132with a grade of "C" or better.

WLD 251 - Fabrication II 3 Credits

This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings.

Pre-requisite: Successful completion of WLD 151with a grade of "C" or better.

WLD 262 - Inspection & Testing **3 Credits**

This course introduces destructive and non-destructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and non-destructive testing processes.

WELDING AND METALS FABRICATION, AAS

The Welding and Metals Fabrication program provides students with instruction, practical experience, and related theory in shielded metal arc welding, gas metal arc welding, flux-cored arc welding, gas tungsten arc welding, manual and automatic oxyacetylene burning, brazing, soldering, air carbon arc gouging, and plasma arc gouging and cutting. Students learn blueprint reading and layout skills and apply them using computer numerically controlled (CNC) metal-working equipment.

	1ST Semester (Freshmam)	
Course Code	Course Title	Credit Unit/ Hours
WEF 101	Safety and Leadership	2
WEF 121	Blueprint Reading for Welders 1	2
WEF 135	Gas Metal Arc Welding (GMAW) Practical	4
WEF 151	Welding Theory 1	2
WEF 175	Shielded Metal Arc Welding (SMAW) Practical	4
MAT 170	Calculus I	4
	Total Semester Credit Hours	18

	2ND Semester (Freshmam)	
Course Code	Course Title	Credit Unit/ Hours
WEF 122	Blueprint Reading for Welders	2
WEF 152	Welding Theory	2
WEF180	Production Welding	4
WEF 185	Gas Tungsten Arc Welding (GTAW) Practical	4
ENG 101	English Composition I	3
	Total Semester Credit Hours	15

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
WEF 225	Blueprint Reading and Layout 3	2
WEF 226	Blueprint Reading and Layout 4	2
WEF 255	Welding and Fabrication Workshop 1	4
WEF 256	Welding and Fabrication Workshop 2	4
COM 101	Fundamentals of Oral Communication	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Hours	18

	4TH Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
WEF 227	Blueprint Reading and Layout 5	2
WEF 228	Blueprint Reading and Layout 6	2
WEF 257	Welding and Fabrication Workshop	3
WEF 258	Welding and Fabrication Workshop	4
EVS 101	Environmental Science	4
	Total Semester Credit Hours	16

ENG 101 - English Composition I **3 Credits**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

WEF 121 Blueprint Reading for Welders 1 2 Credits

Introduction to the study of blueprint reading. Includes basic lines, views, dimensioning and structural shapes, abbreviations and weld symbols, bill of materials, and working with structural and piping drawings.

WEF 135 Gas Metal Arc Welding (GMAW) Practical 4 Credits

Gas Metal Arc Welding (GMAW) covers shop safety and GMA welding of fillet and groove welds in all positions to American Welding Society (AWS) standards. Also covers manual cutting process including oxy-fuel, plasma cutting, and carbon arc cutting and gouging, with the focus on applying these fundamental skills to hands-on projects. Successful completion of this course may lead to certification in the GMAW process.

WEF 151 Welding Theory 1 2 Credits

Topics include basic metallurgy, identification of metals and electrodes, the theory of welding processes, and welding qualifications and procedures. Also includes identification of proper usage of testing methods, welding gases, joint design and configuration, welding positions, and welding currents and polarity.

WEF 175 Shielded Metal Arc Welding (SMAW) Practical 4 Credits

Shielded Metal Arc Welding (SMAW) covers fillet and groove welds in all positions to the American Welding Society (AWS) standards. Successful completion of this course may lead to certification in the SMAW process.

MAT 170 Calculus I **5 Credits**

This is the first course in the calculus sequence. It covers algebraic and transcendental functions; rate of change; limits; continuity; differentiation of algebraic, trigonometric, exponential, logarithmic, and hyperbolic functions; differentials; applications of differentiation; definite and indefinite integrals; area between curves; volumes; and other applications of integration, indeterminate forms, and L'Hôpital's rule.

WEF 122 Blueprint Reading for Welders 2 2 Credits

Further study of blueprint reading with an introduction to geometric dimensioning and tolerancing. Includes weld symbols, applied metrics for welders, dual dimensioning, and international standard symbol. Also includes manual drafting and layout calculations.

Pre-requisite: Successful completion of WEF 101, WEF 121, WEF 135, and WEF 175with a grade of "C" or better.

WEF 152 Welding Theory 2 2 Credits

Learn the theory and application of Gas Tungsten Arc Welding (GTAW), as well as the setup and maintenance of GTA welding systems. Includes basic metallurgy, identification and proper usage of testing methods, welding code standards, and filler metal selection.

Pre-requisite: Successful completion of WEF 101, WEF 121, WEF 135, WEF 151, and WEF 175 with a grade of "C" or better

WEF 180 Production Welding 4 Credits

Production Welding covers shop safety and welding with production processes (including Gas Metal Arc Welding-Spray [GMAW-S], Gas Metal Arc Welding-Pulse [GMAW-P], Flux Cored Arc Welding [FCAW], and Metal Cored Arc Welding [MCAW]), fillet and groove welds at production speeds, and feeds to American Welding Society (AWS) standards. Focus is placed on the application of fundamental welding skills to hands-on projects. Successful completion of this course may lead to certification in the GMAW-S process.

Pre-requisite: Successful completion of WEF 101, WEF 121, WEF 135, WEF 151, and WEF 175with a grade of "C" or better.

WEF 185 Gas Tungsten Arc Welding (GTAW) Practical 4 Credits

Gas Tungsten Arc Welding (GTAW) covers shop safety and GTA welding of fillet and groove welds in all positions to American Welding Society (AWS) standards. Focus is placed on the application of fundamental welding skills to hands-on projects. Successful completion of this course may lead to certification in the GTAW process.

Pre-requisite: Successful completion of WEF 101, WEF 121, WEF 135, WEF 151, and WEF 175 with a grade of "C" or better.

COM 101 Fundamentals of Oral Communication **3 Credits**

This survey course provides an introduction to human communication. Communication is the study and application of messages and meaning foundational to human interaction. Students are prepared to become effective and ethical communicators by learning to be critical users and producers of information and the importance of accommodating multiple perspectives and communication styles. Students use theory, concepts, processes, and communication practices in a variety of personal, academic, professional, and social situations. Emphases include perception, verbal and nonverbal messages, and listening in the contexts of public, interpersonal, mass, and small group communication.

PSY 101 Introduction to Psychology **3 Credits**

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

EVS 101 Environmental Science 4 Credits

This course is designed for non-science majors. It will consider scientific principles and their influence on environmental problems in today's society. The role of humans and our impact on these issues will be emphasized. Past, present, and future trends will be evaluated along with the possible impacts of these trends on the local and global populace.

WEF 225 Blueprint Reading and Layout **3 Credits**

Exploration of basic planning skills, including exercises in the production of planning documents to control a project and the extract of a bill of materials from a given drawing or instructions. Includes production of set drawings using AutoCAD and manual drafting. Also includes basic shearing machines and shearing operations, drilling machines and drilling operations, punches and punching systems, and tapping techniques.

Pre-requisite: Successful completion of WEF 122, WEF 152, WEF 180 and WEF 185 with a grade of "C" or better.

WEF 226 Blueprint Reading and Layout 2 **Credits**

Continuing development of shop planning skills and the production of planning and fabrication documents. Students study the correct use of, and underpinning knowledge in, cutting and forming techniques. Cutting techniques include basic plasma machine operation and programming. Forming techniques include safe and effective setup and use of press brake, finger brake (box and pan folder), rolling machines, and hand tools and forming techniques.
Pre-requisite WEF 122, WEF 152, WEF 180 and WEF 185with a grade of "C" or better.

WEF 256 Welding and Fabrication Workshop 2 **4 Credits**

Practical applications of welding and fabrication with an emphasis on the procedures and methods commonly found in the manufacturing industry, as well as the pre-fabrication equipment involved in cutting/forming/rolling material. Project-based learning is utilized to accentuate key fabrication and project management principles. The welding focus is on completing requirements to earn an advanced welding certification.
Pre-requisite WEF 122, WEF 152, WEF 180 and WEF 185 with a grade of "C" or better.

WEF 227 Blueprint Reading and Layout 5 **2 Credits**

Further development of skills in shop planning, AutoCAD, and the production of more detailed planning and fabrication documents. Includes manual drafting by drawing out developments using parallel, radial, and triangulation techniques, culminating in the creation of a combination piece using these techniques. Also includes the production of patterns and blueprints, more advanced blueprint reading, weld inspection and code, and the production of jigs and fixtures.
Pre-requisite: Successful completion of WEF 225, WEF 226, WEF 255, WEF 256 with a grade of "C" or better

WEF 228 Blueprint Reading and Layout 6 **2 Credits**

Application of acquired skills and knowledge to the planning and production of appropriate designs and documentation for a capstone project. Also includes metallurgy, cutting tools, cutting tool materials, and the correct and safe use of both mill and lathe.
Pre-requisite Successful completion of WEF 225, WEF 226, WEF 255, WEF 256with a grade of "C" or better

WEF 257 Welding and Fabrication Workshop 3 **4 Credits**

Advanced practical applications of welding and fabrication with an emphasis on the procedures and methods commonly found in the manufacturing industry. Includes tooling and fixture design for production, advanced sheet and plate rolling, and advanced fit up and fabrication using shop tools and equipment. Project-based learning is utilized to accentuate key fabrication and project management principles. The welding focus is on completing requirements to earn a second advanced welding certification.
Pre-requisite: Successful completion of WEF 225, WEF 226, WEF 255, WEF 256 with a grade of "C" or better

WEF 258 Welding and Fabrication Workshop 4 Credits

Advanced practical applications of welding and fabrication with an emphasis on the creation of a capstone lab project and the attainment of an advanced welding certification. Students will make full use of the available tools in the welding lab to plan, design, and create a project which will help prepare them for similar work in the welding industry and increase their knowledge of the entire fabrication process. Students will also prove their welding competency by completing the requirements to earn a second advanced welding certification.

Pre-requisite Successful completion of WEF 225, WEF 226, WEF 255, WEF 256with a grade of "C" or better

HUMAN SERVICES TECHNOLOGY, SOCIAL SERVICES CONCENTRATION, AAS

The Human Services Technology/Social Services concentration prepares students for direct service delivery work in social service agencies. The curriculum enables students to link theory and practice through interactive classroom activities developing a skill based academic foundation. Course work includes the history of the social service movement, ethical issues, case management, diversity issues, law in the practice of social work, and community resources. Students also gain skills in interviewing and counseling techniques.

Graduates should qualify for employment with local, county, state, and federal government social service agencies. Employment includes family and child assistance, rehabilitation health services, medical assistance, youth services, aging, and developmentally disabled programs in public and private settings.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 101 -	English Composition I	3
HSE 110	Intro to Human Services	3
PSY 101	Introduction to Psychology	3
SOC 210	Introduction to Sociology	3
SWK 110	Intro to Social Work	3
SOC 213 -	Sociology of the Family	3
	Total Semester Credit Hours	15

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CIS 110	Introduction to Computers	3
ENG 102	English Composition II	3
HSE 123	Interviewing Techniques	3
HSE 125	Counseling	3
PSY 241	Developmental Psych	3
SWK 113	Working With Diversity	3
	Total Semester Credit Hours	15

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
BIO 110	Principles of Biology	4
HSE 112 -	Group Process I	2
HSE 225 -	Crisis Intervention	3
SOC 220 -	Social Problems	3
WBL 111 -	Work-Based Learning I	1
WBL 115 -	Work-Based Learning Seminar I	1
COM 231 -	Public Speaking	3
	Total Semester Credit Hours	15

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
HSE 210 -	Human Services Issues	2
HSE 255 -	Health Prob & Prevent	3
SWK 214 -	Social Work Law	3
SWK 220 -	Swk Issues in Client Services	3
WBL 121 -	Work-Based Learning II	1
WBL 125 -	Work-Based Learning Seminar II	1
BSD 100	Human Relations and Ethics	3
	Total Semester Credit Hours	18

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II 3 Credits

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

COM 231 - Public Speaking 3 Credits

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support.

Pre-requisite: Successful completion of ENG 101 with a grade of "C" or better.

BSD 100 Human Relations and Ethics 3 Credits

Study of modern methods and procedures used in effective human relations and ethics including information on the following: definition and history of human relations, ethics, diversity, self-esteem, motivation, communication and personality styles, conflict management and resolution, and team building and rapport as well as self expression and effective listening skills.

BIO 110 - Principles of Biology 4 Credits

This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life.

HSE 110 - Intro to Human Services 3 Credits

This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.

HSE 112 - Group Process I 2 Credits

This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.

HSE 123 - Interviewing Techniques 3 Credits

This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

HSE 125 – Counseling **3 Credits**

This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem solving, decision making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.

SWK 110 - Intro to Social Work **3 Credits**

This course examines the historical development, values, orientation, and professional standards of social work and focuses on the terminology and broader systems of social welfare. Emphasis is placed on the various fields of practice including those agencies whose primary function is financial assistance, corrections, mental health, and protective services.

SWK 113 - Working with Diversity **3 Credits**

This course examines and promotes understanding, sensitivity, awareness, and knowledge of human diversity. Emphasis is placed on professional responsibilities, duties, and skills critical to multicultural human services practice.

SWK 115 - Community Resources **3 Credits**

This course introduces community resources essential to social work practice. Emphasis is placed on awareness of and interaction with community service personnel.

WBL 111 - Work-Based Learning I Credit Work Experience: **10 Credits**

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience.

WBL 115 - Work-Based Learning Seminar **I Credit**

Colleges may add a local suffix to the course number, if needed, to indicate sections if several programs include the same WBL course number. Colleges may also add a program descriptor to the title, such as "Work-Based Learning I-Welding"

Corequisite(s): WBL 111, WBL 112, WBL 113, or WBL 114with a grade of "C" or better.

WBL 121 - Work-Based Learning II **1 Credit**

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience.

CIS 110 - Introduction to Computers **3 Credits**

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications.

WBL 125 - Work-Based Learning Seminar II **2 Credits**

This course provides an opportunity to apply work-based learning competencies related to the student's program of study. Emphasis is placed on discussion of and the application of work-based competencies within the curriculum components.

Corequisite(s): WBL 121 or WBL 122

SOC 210 - Introduction to Sociology **3 Credits**

This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies.

PHL 240 - Introduction to Ethics **3 Credits**

This course introduces theories about the nature and foundations of moral judgements and applications to contemporary moral issues. Emphasis is placed on moral thoeries such as consequentialism, deontology, and virtue ethics. Upon completion, students should be able to apply various ehtical theories to moral issues such as abortion, captial punishment, poverty, war, terrorism, the treatment of animals, and issues arising from new technologies.

Pre-requisite : Successful completion of ENG 101with a grade of "C" or better.

HSE 210 - Human Services Issues **2 Credits**

This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a multi-faceted field. Upon completion, students should be able to integrate the knowledge, skills, and experiences gained in classroom and clinical experiences with emerging trends in the field.

HSE 225 - Crisis Intervention **3 Credits**

This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

PSY 241 - Developmental Psychology **3 Credits**

This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span.

Pre-requisite : Successful completion of PSY 150with a grade of "C" or better.

SOC 213 - Sociology of the Family **3 Credits**

This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse lifestyles, divorce and remarriage, and economic issues.

SWK 214 - Social Work Law **3 Credits**

This course introduces the major provisions of social services law, current trends, legislative developments, and court procedures. Emphasis is placed on the interpretation of the laws and court decisions related to various social services populations.

SWK 220 - Swk Issues in Client Services **3 Credits**

This course introduces the professional standards, values, and issues in social services. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics.

Pre-requisite : Successful completion of SWK 110with a grade of "C" or better.

HSE 255 - Health Prob & Prevent **3 Credits**

This course surveys a range of health problems and issues, including the development of prevention strategies. Topics include teen pregnancy, HIV/AIDS, tuberculosis, communicable diseases, professional burnout, substance abuse, and sexually transmitted diseases.

SOC 220 - Social Problems **3 Credits**

This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment.

COSMETOLOGY, AAS

The Nubian American Advanced College (NAAC) Cosmetology curriculum is designed to provide competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the cosmetology industry. The curriculum provides a simulated salon environment that enables students to develop manipulative skills.

Course work includes instruction in all phases of professional imaging, hair design, chemical processes, skin care, nail care, multi-cultural practices, business/computer principles, product knowledge, and other selected topics. Graduates should qualify to sit for the State Board of Cosmetic Arts examination. Upon successfully passing the State Board exam, graduates will be issued a license. Employment is available in beauty salons and as skin/nail specialists, platform artists, and related businesses.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
COS 111 -	Cosmetology Concepts I	4
COS 112 -	Salon I	8
ENG 101	English Composition I	3
	Total Semester Credit Hours	15

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
COM 110	Introduction to Communication	3
COS 113	Cosmetology Concepts II	4
COS 114	Salon II	8
MAT 110	Math Measurement & Literacy	3
	Total Semester Credit Hours	18

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
COS 118 -	Salon IV	7
COS 117	Cosmetology Concepts IV	2
PSY 101	Introduction to Psychology	3
CIS 111	Basic PC Literacy Credits: 2	2
	Total Semester Credit Hours	14

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
BUS 230	Small Business Management	3
FRE 111	Elementary French I	3
ART 111	Art Appreciation	3
COS 115	Cosmetology Concepts III	4
COS 116 -	Salon III	4
	Total Semester Credit Hours	15

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

MAT 110 Math Measurement & Literacy 3 Credits

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

CIS 110 Introduction to Computers. 3 Credits

This course provides an introduction to computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems.

COM-120 Introduction to Interpersonal Communication 3 Credits

This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations.

ART 111 - Art Appreciation 3 Credits

This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media.

COS 111 - Cosmetology Concepts I 4 Credits

This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

COS 112 - Salon I 8 Credits

This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

COS 113 - Cosmetology Concepts II **4 Credits**

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

Pre-requisite(s): Successful completion of COS 111 and COS 112 with a grade of "C" or better.

COS 114 - Salon II **8 Credits**

This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

Pre-requisite(s): Successful completion of COS 111 and COS 112with a grade of "C" or better.

CIS 111 - Basic PC Literacy **2 Credits**

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

COS 115 - Cosmetology Concepts III **4 Credits**

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

Pre-requisite(s): Successful completion of COS 111 and COS 112 with a grade of "C" or better.

COS 116 - Salon III **4 Credits**

This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

Pre-requisite(s): Successful completion of COS 111 and COS 112with a grade of "C" or better.

COS 118 - Salon IV **7 Credits Lab: 21**

This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.

Pre-requisite(s): Successful completion of COS 111 and COS 112 with a grade of "C" or better.

COS 117 - Cosmetology Concepts IV **2 Credits**

This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.

Pre-requisite(s): Successful completion of COS 111 and COS 112with a grade of "C" or better.

FRE 111 French Language and Culture I **3 Credits**

This course is designed to introduce the student to the French sound system and grammatical structure in an effort to give the student a basic understanding of the language, including listening comprehension, reading, speaking and writing skills. In addition to language skills, the course offers the student insight into French culture. Classroom instruction is supplemented with exercises in the language laboratory. Recommendation: Primarily designed for students with no previous knowledge of French.

BUS 230 - Small Business Management **3 Credits**

This course introduces the challenges of entrepreneurship including the startup and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

COSMETOLOGY-FACIAL, AAS

The Associate of Applied Science in Cosmetology with a specialty in facial/esthetics is designed to prepare the student with the skills and knowledge required for an entry-level position in the facial/esthetics profession. Facial treatment specialists often work in spas and salons, and some provide skin care services in medical facilities. Other professionals in this field apply treatments and sell make-up in shopping centers or department stores. Common duties for skin care specialists incude providing facial massages, applying wax treatments, sanitizing equipment and selling skin care products. Good candidates for this career would be interested in topics like fashion or beauty and would have excellent people skills.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CSM 120	Orientation to Facial Specialist	4
CSM 148	Principles of Skin Care	2
CSM 121	Principles of Facials and Skin Care Technology I	4
	Total Semester Credit Hours	10

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CSM 145	Principles of Facial and Skin Care Technology II	4
CSM 147	Skin Care and Facial Theory Principles	4
CSM 231	Principles of Facials and Skin Care Technology III	4
PSY 101	Introduction to Psychology	3
SPC 118	Interpersonal Communication	3
	Total Semester Credit Hours	18

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PHE104	Personal/Community Health	3
BIO 108 -	Biology I for Non-Science Majors	4
ART 101	Art Appreciation	3
ENG101	English Composition I	3
ITS 101	Introduction to Computers	3
	Total Semester Credit Hours	16

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
FRE 101	French	3
BUS 101	Business Principles	3
HRP 111	Human Relations	3
MRK 233	Principles of Selling	2
ENG 102	English Composition II	3
	Total Semester Credit Hours	16

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

CSM 120 Orientation to Facial Specialist **3Credits**

Overview of the skills and knowledge necessary for the field of esthetics and skin care. The focus of this class is to give the student an overview of the skills and knowledge they will need in order to succeed in the specialization of skin care.

CSM- 147 Principles of Skin Care/ Facials and Related Theory **3 Credits**

In depth coverage of the theory and practice of skin care, facials and cosmetics.

CSM 145 - Principles of Facial and Skin Care Technology II **4 Credits**

A continuation of the concepts and principles in skin care and other related technologies. Topics include advanced instruction in anatomy, physiology, theory, and related skills of facial and skin care technology.

Pre-requisite: Successful completion of CSM 121 with a "C" or better; **Corequisite**: CSM 231 and CSM 147

CSM 147 Skin Care and Facial Theory Principles **3 Credits**

The central focus of this course is to introduce the student to the chemistry of cosmetics and cosmetic ingredients. Special attention is given to the application of facial treatments, and makeup. Safety measures and sanitation practices are emphasized.

PHE 104 Personal Community Health **3 Credits**

This course provides an introduction to the fundamentals, concepts, strategies, applications, and contemporary trends related to understanding personal and/or community health issues. This course also focuses on empowering various populations with the ability to practice healthy living, promote healthy lifestyles, and enhance individual well-being.

HRP 111: Human Relations **3 Credits**

This course is designed to aid future employees and employers to understand and utilize human relations concepts as they apply to the business environment. It will cover such areas as morale, personal efficiency, leadership, personality, motivation, and communication.

ITS 101 - Introduction to Computers **2 Credits**

Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources. Explores integration and application in business and other segments in society. Fundamentals of computer problem- solving and programming may be discussed and applied.

SPC 118 - Interpersonal Communication **3 Credits**

Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors.

BUS 101 - Business Principles **3 Credits**

This course provides a survey of economic systems, forms of business ownership, and considerations for running a business. Students will learn various aspects of business, management, and leadership functions; organizational considerations; and decision-making processes. Financial topics are introduced, including accounting, money and banking, and securities markets. Also included are discussions of business challenges in the legal and regulatory environment, business ethics, social responsibility, and international business. Emphasized is the dynamic role of business in everyday life.

BIO 108 - Biology I for Non-Science Majors **3 Credits**

A conceptual approach for students not majoring in science. An introduction to the nature of science, the characteristics of life, the molecular and cellular basis of life, viruses, energetics, genetics, reproduction and development. An emphasis will be placed on how these topics are related to issues facing modern society.

ART 101 Art Appreciation **3 Credits**

A general introduction to the visual arts designed to create an appreciation of the vocabulary, media, techniques, and purposes of the creative process. Students will critically interpret and evaluate works of art within formal, cultural, and historical contexts.

PHE 164 - Introduction to Physical Fitness & Wellness **1 Credit**

This course will provide an overview of the lifestyle necessary for fitness and health. Students will participate in physical activities and assess their fitness status. Students will be introduced to proper nutrition, weight management, cardiovascular health, flexibility, and strength training.

CSM 231 Principles of Facials and Skin Care Technology III **3 Credits**

This course focuses on advanced concepts and principles of skin care and other related technologies.

MRK 233 - Principles of Selling **3 Credits**

Overview of the selling process. Identification of the elements of the communication process between buyers and sellers. Examination of the legal and ethical issues of organizations which affect salespeople.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

DIGITAL PHOTOGRAPHY, AAS

Digital Photography offers students an opportunity to acquire specific skills in the creation of photographic images for fine art and commercial use. The associate's degree program provides background in art and design theories, photographic composition, studio portrait and product photography, photographic production and marketing of images for web and media. Computer skills are developed through photographic projects using Adobe Creative Suite and other industry standard software. Qualified individuals may find employment as freelance photographers and in photographic studios.

PROGRAM LEARNING OUTCOMES:

At the successful completion of the Associate in Applied Science Degree in Digital Photography program, the graduate will be able to:

1. demonstrate technical proficiency to industry standards using both natural and artificial lighting.
2. demonstrate technical proficiency to industry standards using professional photographic equipment.
3. demonstrate technical proficiency to industry standards using image editing software.
4. create images using design principals and
5. create a professional portfolio meeting industry standards.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
DES 104	Color Theory	1.5
DES 151	Digital Photography	3
PHO 104	History of Photography	1.5
DES 121	Photoshop I	3
ENG 101	English Composition I	3
	Total Semester Credit Hours	12

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
DES 111	•Drawing I	3
PHO 205	Digital Photography With Lightroom -	3
PHO 105	Photo Setup	3
GEN 105	Computer Technology	3
DES 105	Design and Composition	1.5
	Total Semester Credit Hours	13.5

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
DIG 204	Digital Video Production	3
DES 105	Design and Composition	1.5
-PHO 152	Digital Photography II	2
PHO 106	Photo Retouching	1.5
GEN 106	History of Art	3
PSY101	Introduction to Psychology	3
PHO 204	Commercial Photography	3
	Total Semester Credit Hours	17

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PHO 207	Commercial Photography II	3
PHO 208	Color Correction	3
DES 222	Photoshop II	3
GEN 205	Business and Technical Writing	3
ADV 207	Creative Concept Development	3
GEN 206	Design Business	1.5
	Total Semester Credit Hours	16.5

5th Semester		
Course Code	Course Title	Credit Unit/ Hours
WEB 101	HTML and CSS I*	3
PHO 214	Narrative Photography	2
DIG 201	Digital Video Editing I	3
PHO 259	Project - Digital Photography	2
DEG 260	Portfolio Review	1
GEN 204	Intro to Marketing	1.5
	Total Semester Credit Hours	12.5

ENG 101 - English Composition I **3 Credits**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

BUS 115 - Introduction to Business **3 Credits**

Introduces the application of fundamental business principles to local, national, and international forums. This course examines the relationship of economic systems, governance, regulations, and law upon business operations. It surveys the concepts of career development, business ownership, finance and accounting, economics, marketing, management, operations, human resources, regulations, and business ethics.

COM 125 - Interpersonal Communication **3 Credits**

Examines the communication involved in interpersonal relationships occurring in family, social, and career situations. Relevant concepts include self-concept, perception, listening, nonverbal communication, and conflict**.**

PSY 101 Introduction to Psychology **3 Credits**

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

ANT 101 - Cultural Anthropology: **3 Credits**

Examines the study of human cultural patterns, including communication, economic systems, social and political organizations, religion, healing systems, and cultural change.

ART 111 - Art History I Ancient to Medieval: 3 Credits OR

Provides the knowledge base to understand the visual arts, especially as related to Western Culture. Surveys the visual arts from the Ancient through the Medieval periods.

ART 207 - Art History-1900 to Present: 3 Credits

Provides students with the knowledge base to understand the visual arts as related to Modern and Contemporary visual art. Surveys world art of the twentieth century, including Modernism to Postmodernism.

MGD 111 - Adobe Photoshop I 3 Credits

Concentrates on the high-end capabilities of Adobe Photoshop as an illustration, design and photo retouching tool. Students explore a wide range of selection and manipulation techniques that can be applied to photos, graphics and videos. Course competencies and outline follow those set out by the Adobe Certified Associate exam in Visual Communication Using Adobe Photoshop

PHO 101 - Professional Photography I **3 Credits**

Introduces black and white photography as a fine art medium and develops skills necessary for basic camera and lab operations.

PHO 121 - Photo-Image Capture I **3 Credits**

Emphasizes the fundamental operations of a DSLR camera. The general operation of the camera, proper camera handling and maintenance, exposure control, depth of field, lenses and the visual characteristics of lenses, and an understanding of how digital capture works are emphasized. Additional topics include: f-stops, shutter speeds, metering modes, use of the histogram, auto focus, auto bracketing, and exposure compensation.

PHO 122 - Photo-Image Capture II **3 Credits**

Emphasizes advanced HDSLR camera operation and an understanding of digital imaging processes and terminology. More advanced controls and application of camera techniques such as exposure, basic flash technique, tethered capture, time-lapse, HDSLR video and motion-based capture will be emphasized. In addition to demonstrating technical competency in the aforementioned areas, students will be expected to utilize these techniques as visual communication tools in order to clearly convey their photographic intent.

PHO 143 - Perception & Photography I **3 Credits**

This course presents the fundamentals of visual perception, design, and seeing in the photographic medium. Topics include: elements of composition, Gestalt principles and the psychology of seeing, conceptual and perceptual exercises, depth representation, figure/ground, and the development of ideas.

PHO 161 - Digital Capture Processing I **3 Credits**

This course will cover post processing of digital captures. Methods of transferring files from camera to computer, basic digital asset management, image editing tools, optimizing files for print and screen, image sharpening, proper understanding of black and white tonal scale, methods of converting color captures to black and white images, printing, and matting are included. The lab portion of the class will also be used to assist the production of images required for Photo-Image Capture I and Perception & Photography I.

PHO 162 - Digital Capture Processing II **3 Credits**

This course is a continuation of Digital Capture Processing I and focuses on digital image processing and printing. Topics include: visual understanding of print quality, basic RAW processing, various digital workflows, further development of vocabulary of digital darkroom terminology, creating and utilizing actions in Photoshop, and further advancement of Photoshop technique.

PHO 204 - Commercial Studio Lighting 3 Credits

Explores the creative uses of studio lighting from the perspective of fine art and commercial photography with an emphasis on three dimensional object photography including, lighting techniques, backgrounds, working with shadows and highlights and photographing flat art.

PHO 232 - Professional Portraiture 3 Credits

This course covers the technical and aesthetic aspects of studio and location portrait photography. Course topics include: lighting ratios, lighting styles, location lighting, small system flash, light modifiers for portraiture, metering, composition, equipment, and posing. Career paths in the field of portraiture such as weddings, environmental, editorial, and studio portraits are covered.

PHO 237 - Advanced Lighting Technique 3 Credits

Emphasizes advanced lighting techniques for studio and location situations. Use of power pack, mono-block and small system strobe lighting will be emphasized. Controlling lighting conditions in mixed light situations for a variety of photographic fields including commercial, editorial, advertorial, portrait and events is covered.

PHO 262 - New Media Storytelling 3 Credits

Introduces the student to new media with an emphasis in storytelling. This course will give students hands on experience in the storytelling aspect of this 21st century medium. Students will create projects that utilize multi image photographic skills, audio gathering, video capture, editing video, animation, and text. Students interested in this course should have prior experience with a wide variety of input devices and software. The approach for this course is diverse in order to include editorial and commercial uses of new media for the web. Students will create still photographs and video to communicate ideas in a rich media environment using appropriate software.

PHO 268 - Portfolio & Career Exploration 3 Credits

The course is the terminal/capstone course for the Professional Photography program. Completion of all classes or concurrent enrollment in the remaining classes of the program is a requirement. In this class, students will create a computer-based portfolio and a printed presentation portfolio. Different techniques necessary for the production of the portfolios and styles of portfolios are covered. Resumes, cover letters, promotional pieces, presentation techniques, and skills related to the pursuit of careers and furthering education are covered in this class.

PHO 269 - Business of Photography 3 Credits

Presents a guide to freelance work and a study of business practices and procedures and models unique to a career in photography. Discussion includes determining price structures, examining stock photography and art festivals, equipment and studio needs, business forms, business planning, tax structure, licenses and registration, self-promotion (résumé, website, portfolio, post-card mailers, and business identity package). Course may include visits by professionals in the field and discussion of career opportunities in a quickly changing career field.

PHO 260 - Events and Wedding Photography 3 Credits

Presents skills for the intermediate/advanced photo student interested in learning the professional techniques associated with events (venue) and wedding photography. There will be an emphasis on advanced camera and flash techniques, candid, formal and ceremonial photography. Business and planning aspects will also be covered. Topics covered will include Weddings, Barmitzvah/Basmitzvah, Music Concerts, Sporting Events, Graduations and similar occasions. Students will gain hands-on knowledge and learn practical shooting skills**.**

PHO 233 - Glamour & Fashion Photography 3 Credits

Introduces students to the technical and aesthetic aspects of studio and location portrait photography in the areas of glamour, beauty, and fashion photography. Course topics include: strobe lighting, lighting styles, studio and location lighting, past and current trends in the industry, creativity and posing. Career paths in the field of glamour, beauty and fashion photography are also covered.

COMMERCIAL PHOTOGRAPHY, AAS

The Commercial Photography AAS Degree offers a solid foundation for students to start a career in a range of photography and imaging-related fields. The curriculum provides extensive training in digital and traditional photography, professional camera equipment, contemporary studio and location lighting techniques, portraiture, events and multimedia photographic production. Students learn image capture and manipulation, digital asset management and workflow, and digital printing, publishing and video. Students will also learn about business and marketing aspects of commercial photography necessary to be successful. This program is balanced between the technical and the aesthetic skills necessary to make compelling images. There is balance between traditional and digital image making and balance between the art and business of commercial photography. Electives and portfolio development courses allow students to focus their exploration on the specific kinds of photography they enjoy. An emphasis is placed on strong conceptual thinking and storytelling.

This is a skills-focused, highly intensive program for students serious about working in the photography industry. Taught by expert faculty who have first-hand experience working with top clients and agencies, students will emerge from the AAS Degree program prepared to compete in a range of photographic fields. Students will work with high- end industry standard equipment available for checkout.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
PHO 101 -	Professional Photography I	3
PHO 161	Digital Capture Processing I	3
PHO 143	- Perception & Photography I	3
MGD 111 -	Adobe Photoshop I	3
ENG 101	English Composition I	3
	Total Semester Credit Hours	15

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
PHO 121	Photo-Image Capture I	3
PHO 162	Digital Capture Processing II	3
GRA 121	Graphic Arts I	4
GRA 151	Computer Graphics I	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Hours	13.5

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PHO 122 -	Photo-Image Capture II	3
PHO 204	Commercial Studio Lighting	3
PHO 232 -	Professional Portraiture	3
PHO 237 -	Advanced Lighting Technique	3
PHO 262 -	New Media Storytelling	3
PHO 268 -	Portfolio & Career Exploration	3
	Total Semester Credit Hours	18

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PHO 233	- Glamour & Fashion Photography	3
PHO 260	- Events and Wedding Photography	3
PHO 269 -	Business of Photography	3
GRA 152 -	Computer Graphics II	2
GRA 255 -	Image Manipulation I	2
GRD 141 -	Graphic Design I	4
	Total Semester Credit Hours	17

5th Summer		
Course Code	Course Title	Credit Unit/ Hours
GRA 221	Graphic Arts II	4
ANT 101 -	Cultural Anthropology:	3
COM 125	- Interpersonal Communication	3
BUS 115 -	Introduction to Business	3
	Total Semester Credit Hours	13

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

BUS 115 - Introduction to Business 3 Credits

Focuses on the operation of the American business system. Covers fundamentals of the economy, careers and opportunities, marketing, management, production, governmental regulations, tools of business and social responsibilities.

COM 125 - Interpersonal Communication 3 Credits

Examines the communication involved in interpersonal relationships occurring in family, social, and career situations. Relevant concepts include self-concept, perception, listening, nonverbal communication, and conflict.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

ANT 101 - Cultural Anthropology: 3 Credits

Studies human cultural patterns and learned behavior. Includes linguistics, social and political organization, religion, culture and personality, culture change, and applied anthropology.

MGD 111 - Adobe Photoshop I 3 Credits

Concentrates on the high-end capabilities of Adobe Photoshop as an illustration, design and photo retouching tool. Students explore a wide range of selection and manipulation techniques that can be applied to photos, graphics and videos. Course competencies and outline follow those set out by the Adobe Certified Associate exam in Visual Communication Using Adobe Photoshop.

PHO 101 - Professional Photography I 3 Credits

Introduces black and white photography as a fine art medium and develops skills necessary for basic camera and lab operations.

PHO 121 - Photo-Image Capture I **3 Credits**

Emphasizes the fundamental operations of a DSLR camera. The general operation of the camera, proper camera handling and maintenance, exposure control, depth of field, lenses and the visual characteristics of lenses, and an understanding of how digital capture works are emphasized. Additional topics include: f-stops, shutter speeds, metering modes, use of the histogram, auto focus, auto bracketing, and exposure compensation.

PHO 122 - Photo-Image Capture II **3 Credits**

Emphasizes advanced HDSLR camera operation and an understanding of digital imaging processes and terminology. More advanced controls and application of camera techniques such as exposure, basic flash technique, tethered capture, time-lapse, HDSLR video and motion-based capture will be emphasized. In addition to demonstrating technical competency in the aforementioned areas, students will be expected to utilize these techniques as visual communication tools in order to clearly convey their photographic intent.

Pre-requisite: Successful completion of PHO 121 with a grade of "C" or better.

PHO 143 - Perception & Photography I **3 Credits**

This course presents the fundamentals of visual perception, design, and seeing in the photographic medium. Topics include: elements of composition, Gestalt principles and the psychology of seeing, conceptual and perceptual exercises, depth representation, figure/ground, and the development of ideas.

PHO 161 - Digital Capture Processing I **3 Credits**

This course will cover post processing of digital captures. Methods of transferring files from camera to computer, basic digital asset management, image editing tools, optimizing files for print and screen, image sharpening, proper understanding of black and white tonal scale, methods of converting color captures to black and white images, printing, and matting are included. The lab portion of the class will also be used to assist the production of images required for Photo-Image Capture I and Perception & Photography I.

PHO 162 - Digital Capture Processing II **3 Credits**

This course is a continuation of Digital Capture Processing I and focuses on digital image processing and printing. Topics include: visual understanding of print quality, basic RAW processing, various digital workflows, further development of vocabulary of digital darkroom terminology, creating and utilizing actions in Photoshop, and further advancement of Photoshop technique.

Pre-requisite(s): Successful completion of MGD 111 and PHO 161 with a grade of "C" or better

GRA 121 - Graphic Arts I **4 Credits**

This course introduces terminology, tools and materials, procedures, and equipment used in graphic arts production. Topics include copy preparation and pre-press production relative to printing. Upon completion, students should be able to demonstrate an understanding of graphic arts production.

GRA 151 - Computer Graphics I **2 Credits**

This course introduces the use of hardware and software for production and design in graphic arts. Topics include graphical user interface and current industry uses such as design, layout, typography, illustration, and imaging for production. Upon completion, students should be able to understand and use the computer as a fundamental design and production tool.

GRA 152 - Computer Graphics II **2 Credits**

This course covers advanced design and layout concepts utilizing illustration, page layout, and imaging software in graphic arts. Emphasis is placed on enhancing and developing the skills that were introduced in GRA 151. Upon completion, students should be able to select and utilize appropriate software for design and layout solutions.

GRD 141 - Graphic Design I **4 Credits**

This course introduces the conceptualization process used in visual problem solving. Emphasis is placed on learning the principles of design and on the manipulation and organization of elements. Upon completion, students should be able to apply design principles and visual elements to projects.

PHO 204 - Commercial Studio Lighting **3 Credits**

Explores the creative uses of studio lighting from the perspective of fine art and commercial photography with an emphasis on three dimensional object photography including, lighting techniques, backgrounds, working with shadows and highlights and photographing flat art.
Pre-requisite: Successful completion of PHO 121 with a grade of "C" or better

PHO 232 - Professional Portraiture **3 Credits**

This course covers the technical and aesthetic aspects of studio and location portrait photography. Course topics include: lighting ratios, lighting styles, location lighting, small system flash, light modifiers for portraiture, metering, composition, equipment, and posing. Career paths in the field of portraiture such as weddings, environmental, editorial, and studio portraits are covered.
Pre-requisite: Successful completion of PHO 204 with a grade of "C" or better

PHO 237 - Advanced Lighting Technique **3 Credits**

Emphasizes advanced lighting techniques for studio and location situations. Use of power pack, mono-block and small system strobe lighting will be emphasized. Controlling lighting conditions in mixed light situations for a variety of photographic fields including commercial, editorial, advertorial, portrait and events is covered.
Pre-requisite: Successful completion of PHO 204 with a grade of "C" or better.

PHO 262 - New Media Storytelling 3 Credits

Introduces the student to new media with an emphasis in storytelling. This course will give students hands on experience in the storytelling aspect of this 21st century medium. Students will create projects that utilize multi image photographic skills, audio gathering, video capture, editing video, animation, and text. Students interested in this course should have prior experience with a wide variety of input devices and software. The approach for this course is diverse in order to include editorial and commercial uses of new media for the web. Students will create still photographs and video to communicate ideas in a rich media environment using appropriate software.

Pre-requisite: Successful completion of PHO 122 with a grade of "C" or better

PHO 268 - Portfolio & Career Exploration 3 Credits

The course is the terminal/capstone course for the Professional Photography program. Completion of all classes or concurrent enrollment in the remaining classes of the program is a requirement. In this class, students will create a computer-based portfolio and a printed presentation portfolio. Different techniques necessary for the production of the portfolios and styles of portfolios are covered. Resumes, cover letters, promotional pieces, presentation techniques, and skills related to the pursuit of careers and furthering education are covered in this class.

Pre-requisite: Successful completion of PHO 237 with a grade of "C" or better

PHO 269 - Business of Photography 3 Credits

Presents a guide to freelance work and a study of business practices and procedures and models unique to a career in photography. Discussion includes determining price structures, examining stock photography and art festivals, equipment and studio needs, business forms, business planning, tax structure, licenses and registration, self-promotion (résumé, website, portfolio, post-card mailers, and business identity package). Course may include visits by professionals in the field and discussion of career opportunities in a quickly changing career field.

PHO 233 - Glamour & Fashion Photography 3 Credits

Introduces students to the technical and aesthetic aspects of studio and location portrait photography in the areas of glamour, beauty, and fashion photography. Course topics include: strobe lighting, lighting styles, studio and location lighting, past and current trends in the industry, creativity and posing. Career paths in the field of glamour, beauty and fashion photography are also covered.

Pre-requisite: Successful completion of PHO 204 with a grade of "C" or better

PHO 260 - Events and Wedding Photography 3 Credits

Presents skills for the intermediate/advanced photo student interested in learning the professional techniques associated with events (venue) and wedding photography. There will be an emphasis on advanced camera and flash techniques, candid, formal and ceremonial photography. Business and planning aspects will also be covered. Topics covered will include Weddings, Barmitzvah/Basmitzvah, Music Concerts, Sporting Events, Graduations and similar occasions. Students will gain hands-on knowledge and learn practical shooting skills.

Pre-requisite: Successful completion of PHO 204 with a grade of "C" or better.

GRA 221 - Graphic Arts II 4 Credits

This course is a continuation of GRA 121. Topics include multi-color image preparation, prepress production, control of close/hairline register in image assembly and press operation, and post-press procedures. Upon completion, students should be able to demonstrate competence in all phases of graphic arts production.

Pre-requisite(s): Successful completion of GRA 121, GRA 151with a grade of "C" or better.

GRA 255 - Image Manipulation I 2 Credits

This course covers applications associated with electronic image manipulation, including color correction, color separation, special effects, and image conversion. Topics include image capturing hardware, image-processing software, and output options. Upon completion, students should be able to utilize hardware and software to acquire, manipulate, and output images to satisfy design and production.

Pre-requisite: Successful completion of GRA 151 with a grade of "C" or better.

HEAVY DIESEL TRUCK, AAS

The Heavy Diesel Truck Associate of Applied Science (AAS) degree will prepare students for a career in the repair and maintenance of diesel engines by focusing on engines for over-the-road heavy duty diesel trucks. Students will be trained in all phases of over-the-road truck repair, including electrical/electronic systems, engines, power trains, suspension and steering, brake systems, hydraulics, and preventative maintenance. Many people choose to be masters of all truck systems to be able to personally handle any customer concern. Students will also have the opportunity to acquire skills in new Crete Carrier Diesel Technology & Welding Center.

1st Semester (Freshman)		
Course Code	Course Title	Credit Units/Hours
DES 111	Diesel Truck Fundamentals	4
DES 115	Fuel Systems & Electronic Controls	3
DES 113	Electrical Systems I	4
DES 121	Diesel Engines I	4
ENG 101	English Composition I	3
	Total Semester Credit Hours	18

2nd Semester (Freshman)		
Course Code	Course Title	Credit Units/Hours
DES 122	Fuel Systems II	1.5
DES 124	Hydraulics & Braking Systems	4
DES 190	Cooperative Experience	4
DES 241 -	HVAC	3.5
ENG 102	English Composition II	3
	Total Semester Credit Hours	17

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Units/Hours
DES 243	Steering and Suspension	3.5
DES 245	Power Trains	4
DES 251	Automatic Transmissions & Preventative Maintenance	4
DES 253	Electronics & Engine Diagnostics	4
WLD 119	- O/A and GMAW Welding	1
	Total Semester Credit Hours	16.5

4th Semester (Sophomore)		
Course Code	Course Title	Credit Units/Hours
MAT 114	College Algebra	3
ECO 120	Personal Finance	3
COM 131	Public Speaking	3
PSY 110	Introduction to Psychology	3
PHY 115	Descriptive Physics	4
	Total Semester Credit Hours	16

COM115 Public Speaking 3 Credits

This course is an application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations.

MAT114 College Algebra **3 Credits**

This course is an in-depth study and application of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

ENG 101 - English Composition I **3 Credits**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

PSY 110 - Introduction to Psychology **3 Credits**

An introduction to the science of psychology including the application of critical thinking to the study of learning theory, memory, personality, growth and development, biological and neurological aspects, abnormal behavior, therapies, intelligence, motivation, emotion, sensation, perception, and theoretical perspectives.

ECO 110 - Personal Finance **3 Credits**

Covers the basic principles needed for effective personal financial management, including the practical applications of money management, budgeting, taxes, credit, insurance, housing, investments, and retirement planning.

PHY 110 - Descriptive Physics **4 Credits**

Conceptual survey of physics for the non-science major. Topics covered include motion, fluids, heat, electricity, magnetism, waves, and optics. Emphasis will be placed on using concepts to analyze physical problems. The course includes both lecture and laboratory time.

DES 111 - Diesel Truck Fundamentals **4 Credits**

Proper use and care of power and hand tools. Micrometers, dial indicators, torque wrenches, twist drills, taps, dies, screw extractors, thread restoration, tube flaring, fittings and fasteners. Theory of power transmission from engine to rear wheels. Engine measurements and performance, levers, gears, chains, clutches, transmissions, planetary gears, drive lines, differentials, rear axles, and the disassembly, inspection, adjustment, and reassembly of standard transmissions and differentials.

DES 113 - Electrical Systems I **4.5 Credits**

Basic electrical and electronic principles and applications of magnetism, electromagnetism, and the practice of electrical measurements with analog and digital meters. Purpose, theory, construction, operation, and testing of lead acid batteries. Theory of cranking motor operation, and its application to modern cranking systems. Lab activities include component and circuit testing with analog and digital meters. Theory, operation, and testing of electronic ignition systems. Theory of AC type charging systems and their application to modern vehicles. Lab work in charging system and diagnosis, proper disassembly procedures, alternator component testing, reassembly, and complete system testing with results compared to specifications.

DES 115 - Fuel Systems & Electronic Controls **3 Credits**

The study of fuel manufacturing, testing, octane and cetane numbers, additive, and how fuels react during compression and combustion in gasoline and diesel applications. Theory, construction, and operation of fuel tanks, fuel gauges, fuel lift pumps, air and fuel filtering systems, fuel lines, intake and exhaust manifold systems, heat exchangers, turbochargers, and superchargers. Theory and operation of fuel atomization and vaporization systems is also covered. Theory of operation, troubleshooting, diagnosis, and repair of truck cab/chassis and trailer wiring/lighting systems. Instruments, gauges, and electrical accessories are also covered. Engine/vehicle electronic sensors and computers are included in this course.

DES 121 - Diesel Engines I **4.5 Credits**

Basic physical operation and construction of two and four stroke cycle, single and multiple cylinder engines. Ignition timing of four stroke cycle engines to factory specifications; balance, compression, and cylinder leakage tests; types of internal combustion engine cooling systems, components, and coolants. Basic theory, construction, and operation of the engines valve trains. Valves, valve seats, camshafts, cam followers, valve springs, rocker arm assemblies, push rods, and related parts. Valve timing and adjustments and basic procedures and operation of valve and seat reconditioning will be performed and proficiency evaluated. Design, construction, operation and servicing of the following engine components; crankshafts, pistons, piston rings, connecting rods, and bearings. Crankcase lubricants, lubrication and filtration systems. Activities include disassembly, inspection, measurements, reassembly, and adjustment.

Prerequisite(s): Successful completion of DES 111, DES 113, DES 115 with a grade of C or better

DES 122 - Fuel Systems II **1.5 Credits**

Theory of operation and construction of diesel and gasoline fuel injection system nozzles and injectors. Electronic injectors are covered in this course. Lab work consists of testing and service procedures for nozzles/injectors and use of DVOM to check various sensors and circuits. Theory of operation and service procedures for emission control devices used on diesel and gasoline applications is included.

Prerequisite(s): Successful completion of DES 111 , DES 113, DES 115 with a grade of C or better

DES 124 - Hydraulics & Braking Systems **4 Credits**

Principles and application of theory design, construction, and testing of hydraulic systems including pumps, actuators, reservoirs, accumulators, lines, fittings, filters, and fluids. Principles, components, operation, service, repair, adjustment and troubleshooting of the hydraulic brake system used on today's trucks, including safety, brake balance and anti-lock brakes. Principles, components, operation, service, repair, adjustment and troubleshooting of the air brake systems used on today's trucks, including safety, brake balance and anti-lock brakes.

Prerequisite(s): Successful completion of DES 111, DES 113, DES 115 with a grade of C or better

DES 191 - Cooperative Experience **4 Credits**

On-the-job experience in a diesel truck repair shop. Practice of skills and knowledge acquired in previous terms.

Prerequisite(s): Successful completion of DES 121, DES 122, DES 124with a grade of C or better

DES 241 – HVAC **3.5 Credits**

Principles and application of theory, design, construction, components, operation, service, repair, adjustment and troubleshooting of the air conditioning and heating systems used on today's trucks, use of equipment and shop safety.

Prerequisite(s): Successful completion of DES 121, DES 122, DESL 124with a grade of C or better

DES 243 - Steering and Suspension **3.5 Credits**

Principles, components, operation, service, repair, adjustment and troubleshooting of the steering and suspension systems used on today's trucks, tractor and trailer alignment, use of equipment and shop safety.

Prerequisite(s): Successful completion of DES 121, DES 122, DES 124with a grade of C or better

DES 245 - Power Trains **4 Credits**

Lecture, demonstration and laboratory course encompassing the principles, design, construction, operation, repair, and adjustment of five through eighteen speed manual shift transmissions. Clutch removal, troubleshooting, repair, installation and adjustment plus PTO installation and adjustment are also covered. Lecture, demonstration and laboratory course encompassing the principles, design, construction, and repair of truck final drives and related components. Phasing and angularity of drivelines is covered along with operation, inspection and replacement of u-joints.

Prerequisite(s): Successful completion of DES 121, DES 122, DES 124with a grade of C or better

DES 251 - Automatic Transmissions & Preventative Maintenance 4 Credits

Principles, design, and construction of Allison automatic truck transmissions. Lab work in disassembly, inspection, reassembly, adjustment, repair and testing of the automatic transmission. Lecture, demonstration, and laboratory course for entry level technician designed to introduce the student to correct procedures and practices of vehicle preventive maintenance and inspection.

Prerequisite(s): Successful completion of DES 241, DES 243, DES 245with a grade of C or better

DES 253 - Electronics & Engine Diagnostics 4 Credits

The advanced use of digital multi-meters and circuit diagnostic techniques, including lab scope setup and use. Engine driveability diagnostics, setting customer specified parameters, operation, and adjustment of engine overhead systems.

Prerequisite(s): Successful completion of DES 241, DES 243, DES 245with a grade of C or better

WLD 119 - O/A and GMAW Welding 1 Credit

Study of theory and practice of welding and cutting fundamentals. This course includes safety, oxy-fuel braze welding, flame cutting, Gas Metal Arc Welding and plasma cutting.

PLUMBING TECHNOLOGY, AAS

The Plumbing Technology Program prepares students for work in all phases of plumbing using a variety of hand and power tool skills. Course work includes training in assembly, installation and repair of pipes, fittings and fixtures which make up water supply or waste disposal systems. plumbing apprenticeship and other certification is attained upon completion of the program.

The Plumbing Technology graduate studies building plans and working drawings to determine work aids and plans the sequence of installation according to print specifications and codes.

The majority of plumbers enter the trade as apprentices, working toward journeyman and master status in residential, commercial and industrial work. Plumbers work in various sized shops in many communities and employment exists nationwide.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 101	English Composition 1	3
MAT 111	Technical Mathematics 2	3
COM 111	Intro to Public Speaking	3
CAPP 120	Introduction to Computers	3
CST 135	Basic Rigging	1
DDS 119	Technical Graphics I	3
	Total Semester Credit Hours	16

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
EET 110	Electronics Survey I	3
HPE 234	First Aid and CPR	2
IT 111	Industrial Safety/Waste Mgmnt	2
PLM 100	Intro to the Plumbing Trades	4
PLM 110	Intro to Plumbing and Drawing	1
PLM 120	Intro to Piping Systems	3
	Total Semester Credit Hours	15

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PLM 125	Intro to Plumbing Fixtures	2
PLM 200	Pipe Fitting Tools & Motor Eq	3
PLM 210	Advanced Blueprint Reading	2
PLM 230	Hngrs, Supports, &Fld Testing	2
PLM 250	Special Piping	3
PLM 260	Intro to Cntrl Circuit Trblsht	2
PLM 270	Hydronic Heating & Cooling Sys	2
	Total Semester Credit Hours	16

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
PLM 280	Energy Management	1
PLM 285	System Startup & Shutdown	1
WLD 110	Welding Theory I	2
WLD 111	Welding Theory I Practical	2
PLM 206	Applied Water Hydraulics	3
WLD 180	Shielded Metal Arc Welding	3
	Total Semester Credit Hours	12

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

MAT 111. Technical Mathematics. 3 Credits.

This course is a basic mathematics course for developing mathematics skills through introductory algebra as they relate to technical programs. This course includes measurement systems, use of measuring tools, as well as development of area and volume concepts with respect to technical applications.

COM 111. Intro to Public Speaking. 3 Credits.

A study and utilization of the principles and techniques of oral communication. Problems of research, preparation, content, organization, argument, and delivery are examined.

CAP 120. Introduction to Computers. 3 Credits.
A literacy-based approach is used to survey the computer and the computer industry. Topics covered include: Microcomputer applications, input, processor, output, auxiliary storage, file and database management, communications, information system life cycle, program development and systems software, and trends, issues and career opportunities in the computer industry. An opportunity for hands-on work with standard software packages including word processors, electronic spreadsheets, database systems, and graphics packages is presented in lab sections.

CST 135. Basic Rigging. 1 Credit.
Explains how ropes, chains, hoists, loaders, and cranes are used to move material and equipment from one location to another on a job site. It describes inspection techniques and load-handling safety practices as well as reviews American National Standards Institute (ANSI) hand signals.
Pre-requisite: Successful completion of ICT 111 with a grade of "C" or better.

DDS 119. Technical Graphics I. 3 Credits.
The student will gain knowledge and skills needed to produce drawings and understand basic drafting theory. Topics developed on the board will include sketching, lettering, instruments, scaling, applied geometry, orthographic projection, dimensioning, applied technical mathematical relations, primary auxiliary views, sections, threads, and weld symbols.

EET 110. Electronics Survey I. 3 Credits.
An introduction to basic concepts and terminology of electronics for the non-electronics major. Topics start with electricity and continue through every day commercial and home applications.

HPE 234. First Aid and CPR. 2 Credits.
A course designed to provide the student with the latest approved first aid and CPR procedures.

IT 111. Industrial Safety/Waste Mgmnt. 2 Credits.
A course designed to familiarize the student with proper safety practices and procedures. Course content will include protective clothing, handling of hazardous materials, OSHA regulations, workman's compensation, and first aid. Also, safe practices in using hand and power tools, scaffolds and ladders, chains and cables, compressed gasses, proper storage of tools and chemicals, and handling of hazardous waste will also be addressed.

PLUM 100. Intro to the Plumbing Trades. 4 Credits.
This course covers tools in the plumbing trade and how to use them: tools powered by electricity, batteries, and pressurized air, such as drills, saws, grinders, sanders, slings, hardware, hoists, rigging operations, crtical safety issues, and accepted rigging techniques and practices.

PLM 110. Intro to Plumbing and Drawing. 1 Credit.
This course introduces the history of plumbing from ancient times to current plumbing training programs, and also covers professional practices, career opportunities, and some basic safety. This course reviews the blueprints that are included in a building's plans and then moves on to specific plumbing drawings, such as isometric and oblique pictorial drawings, orthographic drawings, and schematic drawings. It also covers drawings of fixtures, assembly drawings, and cutaway drawings. This course includes an application of plumbing math.

PLM 120. Intro to Piping Systems. 3 Credits.
This course describes the various types of plastic piping and fittings, what each is used for, and the measuring, cutting, and joining techniques for each type; hangers and supports used with plastic pipe, various types of copper tubing and fittings, measuring, cutting, and joining techniques, two types of cast-iron pipe (hub and no-hub). This course also describes carbon steel pipe; an overview of the drain, waste, and vent (DWV) systems; basics of traps, drains, vents, DWV fittings, and clean outs and an overview of the water distribution system.

PLM 125. Intro to Plumbing Fixtures. 2 Credits.
This course covers the various types of fixtures that plumbers install, including sinks and lavatories, bathtubs and showers, water closets and urinals, garbage disposals and dishwashers, and laundry trays and mop basins.

PLM 170. Plumbing Codes. 2 Credits.
This course is a study of the State of Montana plumbing code as it regulates environmental sanitation for the protection of public health. It also includes a study of the materials and installation methods that require a minimum of service and maintenance.

WLD 111. Welding Theory I Practical. 2 Credits.
An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered.

WLD 180. Shielded Metal Arc Welding. 3 Credits.
A continuation of WLD 110 and 111, additional training in welding horizontal, vertical, and overhead positions of mild steel. Emphasis is placed on alloys and special applications.
Pre-requisites: Successful completion of WLD 110 and 111 or consent of instructor.

WLD 110. Welding Theory I. 2 Credits.
An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered.

PLM 200. Pipe Fitting Tools & Motor Eq. 3 Credits.
This course covers general hand tool safety and procedures for identifying, selecting, inspecting, using, and caring for pipe vises and stands, pipe wrenches, levels, pipe fabrication tools, and pipe bending and flaring tools.

PLM 210. Advanced Blueprint Reading. 2 Credits.
This course introduces plot plans, structural drawings, elevation drawings, as-built drawings, equipment arrangement drawings, isometric drawings, spool sheets, and detail sheets in the plumbing industry.

PLM 230. Hngrs, Supports, &Fld Testing. 2 Credits.
This course describes pipe hangers and supports found on the job site and the selection and performance of field tests of plumbing installation.

PLM 250. Special Piping. 3 Credits.
This course explains how to assemble flared and compression joints using copper tubing and the installation of hydronic piping.

PLM 260. Intro to Cntrl Circuit Trouble shooting. 2 Credits.
This course covers the operation, testing, and adjustment of conventional and electronic thermostats as well as the operation of common electrical and electronic circuits used to control HVAC systems.

PLM 270. Hydronic Heating & Cooling Sys. 2 Credits.
This course covers operating principles, piping systems, and preventive maintenance pertaining to the servicing of boilers, chillers, chilled water systems, absorption systems, steam systems, and system traps.

PLM 280. Energy Management. 1 Credit.
This course explains how computer and microprocessor controls are used to manage zoned HVAC systems in residential and commercial buildings.

PLM 285. System Startup & Shutdown. 1 Credit.
This course covers procedures for the start-up of hot water and steam heating systems and chilled water systems. Emphasis is on start-up after initial equipment installation or after an extended period of shutdown.

PLM 206. Applied Water Hydraulics. 3 Credits.
Applied hydraulics including study of water and wastewater collection and distribution, maintenance, and safety. Includes lecture and laboratory hours, but the hours are not the kind of experience that satisfies the laboratory science requirement. This course does not meet the laboratory science requirement.

FUNERAL SERVICE EDUCATION, AAS

The Associate of Applied Science degree in Funeral Service Education at Nubian American Advanced College (NAAC) Park prepares students for any entry level position as a funeral director and embalmer in a funeral home

Funeral Service Education provides candidates with a comprehensive understanding of all phases of funeral service necessary to serve the bereaved in a professional and ethical manner. The need for funeral directors and embalmers is increasing greatly and the earning potential is also increasing.

Graduates of this program will be able to: explain the importance of funeral service professionals in developing relationships with the families communities they serve; identify standards of ethical conduct in funeral service practice; interpret how federal, state, and local laws apply to funeral service in order to ensure compliance; apply principles of public health and safety in the handling and preparation of human remains; demonstrate technical skills in embalming and restorative art that are necessary for the preparation and handling of human remains; demonstrate skills required for conducting arrangement conferences, visitations, services, and ceremonies; describe the requirements and procedures for burial, cremation, and other accepted forms of final disposition of human remains; describe methods to address the grief-related needs of the bereaved; explain management skills associated with operating a funeral establishment; and demonstrate verbal and written communication skills and research skills needed for funeral service practice.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BIO 111	Introductory Biology I	4
ENG 101	English Composition I	3
MAT 108	Elementary Applied Mathematics	3
PSY 101	Introduction to Psychology	3
FSE 101	History and Sociology of Funeral Service	3
	Total Semester Credit Hours	16

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
BIO 103	Problems in Anatomy	3
CMP 116	Computer Literacy	3
FSE 102	Dynamics of Grief Management	3
FSE 103	Funeral Directing	3
FSE 104	Funeral Directing Practicum	2
FSE 108	Embalming Chemistry	2
ECO 201	Macroeconomics	3
	Total Semester Credit Hours	19

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
COM 101	Oral Communication I	3
FSE 105	Funeral Directing Practicum II	1
FSE 106	Mortuary Law and Ethics	3
FSE 107	Funeral Service Merchandising	2
FSE 201	Funeral Home Management	3
FSE 210	Embalming	3
FSE 203	Embalming Practicum I	1
FSE 211	Microbiology for Funeral Service	3
	Total Semester Credit Hours	19

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
ACT 100	Applied Accounting	3
FSE 212	Embalming II	3
FSE 205	Embalming Practicum II	2
FSE 206.	Restorative Art	4
FSE 209	Pathology for Funeral Service	3
FSE 208	Funeral Service Seminar	3
	Total Semester Credit Hours	18

BIO 111. Introductory Biology I .4 Credits.

Introductory Biology I provides a consideration of the principles of biology, with emphasis on the molecular approach to the structure and function of living organisms. This course is intended for liberal arts students and majors in physical and occupational therapy, nursing, and health science programs.

MAT 108. Elementary Applied Mathematics. 3 Credits.

This course will include a review of fractions, decimals and percent. Topics may include ratios, proportions, measurements, metrics, powers, roots, simple equations, estimation, graphs, and applications relevant to many Associate in Applied Science programs.

Pre-requisites: High School Maths with a grade of "C" or better.

ENG 101 - English Composition I 3Credits

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development,

intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

CMP 116. Computer Literacy. 3 Credits.
This course explores the terminology and concepts of computers including file management, Internet browsers, and web page development. Students gain proficiency using productivity tools such as word processors, presentation software, electronic spreadsheets and electronic mail to solve problems, communicate, and manage information to make informed decisions. Students will also develop a computer application.
Prerequisite: Reading Proficiency.

COM 101. Oral Communication I 3 Credits.
Oral Communication I is a basic course in speech communication. It offers students an opportunity to explore effective one-to-one, small group, and large group oral communication processes. Emphasis is placed on a theoretical/conceptual approach as well as skill development and application of oral communication concepts to various communication settings and relationships.
Prerequisite: Reading Proficiency

ACC 100. Applied Accounting. 3 Credits.
An introductory course in the principles of accounting with emphasis on practice in bookkeeping techniques, designed to familiarize career students with the basic accounting system and the knowledge of keeping records.
Pre-requisite: Reading Proficiency.

FSE 101. History and Sociology of Funeral Service. 3 Credits.
This course surveys funeral and burial customs associated with the beliefs and practices in various cultures from the early Egyptians to present day. In addition, the general principles related to customs, religions, human relations, social behavior, and their influences on funeral practices will be examined. program.

BIO 103. Problems in Anatomy. 3 Credits.
A course dealing with the anatomy of the human body; study of the structure of cells, tissues, organs, and systems with emphasis on those subjects important to embalming. Additional lab hours required.
Pre-requisite: Successful completion of BIO 111 with a grade of "C" or better

FSE 102. Dynamics of Grief Management. 3 Credits.
Dynamics of Grief Management explores the topic of funeral service psychology, which includes the theories of grief, the purposes of the funeral rite, and the importance of interpersonal communication skills and basic helping techniques.

FSE 103. Funeral Directing. 3 Credits.
Funeral Directing introduces the primary duties and responsibilities of the funeral director. Special emphasis is placed on the funeral director's role in working with the family of the decedent, as they select options for funeral rites, ceremonies, and committal services. Legal and ethical obligations, as well as the value of effective communication skills, are also examined.
Pre-requisite: Reading Proficiency.

FSE 104. Funeral Directing Practicum. 2 Credits.
Funeral Directing Practicum is a course that introduces the practical aspects of funeral home operations, which includes local, state, and federal laws as they pertain to funeral service. In addition, students will participate in funeral arranging, funeral directing, and committal service procedures. All funeral directing functions will be performed under the direct supervision of a licensed funeral director and the NAAC Funeral Service Education faculty. Additional practicum hours may be required.
Corequisite :FSE 103 with minimum grades of "C"

FSE 105. Funeral Directing Practicum II. 2 Credits.
This course is a continuation of Funeral Directing Practicum I and will provide additional experience with the practical aspects of funeral home operations, which includes local, state, and federal laws as they pertain to funeral service. In addition, students will participate in funeral arranging, funeral directing, and committal service procedures. All funeral directing functions will be performed under the direct supervision of a licensed funeral director and the St. Louis Community College Funeral Service Education faculty. Additional hours required.
Pre-requisites: Successful completion of FSE 103 and FSE 104 with minimum grades of "C"

FSE 106. Mortuary Law and Ethics. 3 Credits.
Mortuary Law and Ethics introduces legal and ethical issues in the funeral service profession. This includes the sources of business law, mortuary law, rights and duties regarding disposition of dead bodies, state and federal regulation of funeral homes, funeral directors and cemeteries, probate law, and funeral professional ethics.

FSE 107. Funeral Service Merchandising. 2 Credits.
Funeral Service Merchandising introduces the practical aspects of product knowledge and merchandising for caskets, outer burial containers, and other related funeral service merchandise.
Pre-requisite: Reading Proficiency.

FSE 108. Embalming Chemistry. 2 Credits.
Embalming Chemistry provides a survey of the basic principles of chemistry as they relate to funeral service. In this course there is major emphasis on chemical principles and precautions involved in the sanitation, disinfection, and public health. The government regulation of chemicals currently used in funeral service is reviewed.

Pre-requisite: Successful completion of FSE 101 with a minimum grade of "C" and Reading Proficiency.

FSE 201. Funeral Home Management. 3 Credits

Funeral Home Management introduces management principles for funeral home operations. This includes human resources, financial, marketing, facilities, and office management as well as their application to the small business environment.

FSE 210. Embalming. 3 Credits

Embalming is a course that will examine the purpose and need for embalming. This will include types of death, signs of death, tests for death, postmortem changes, ethics of embalming, chemical and physical changes, selection and raising of vessels, discolorations, types of embalming chemicals, injection, drainage, and dilution. This course will also survey chemistry, microbiology, and pathology as applied to embalming.

Pre-requisites: Successful completion of BIO 103 and FSE 101 with a minimum grade of "C",and **Corequisite:** FSE 203

FSE 203. Embalming Practicum I. 2 Credits

Embalming Practicum I applies the theoretical aspects of an embalming operation. All embalming operations are performed under the direct supervision and instruction of a licensed embalmer and the NAAC Funeral Service.

Pre-requisite: Successful completion of BIO 103 with a minimum grade of "C" and **Corequisite**: FSE 203

FSE 205. Embalming Practicum II. 2 Credits

Embalming Practicum II applies the theoretical aspects of an embalming operation, with emphasis placed on advanced procedures for embalming autopsy and trauma cases. Embalming operations are performed under the direct supervision and instruction of a licensed embalmer and NAAC Funeral Service Education personnel.

Pre-requisites: FSE 201 and FSE 203 , both with minimum grades of "C"

SE 206. Restorative Art. 4 Credits.

Restorative Art prepares the student to recognize and apply the various restorative and cosmetology techniques used in the restoration of the deceased.

Pre-requisite: Successful completion of FSE 201 with a minimum grade of "C"

FSE 211. Microbiology for Funeral Service. 3 Credits.

Microbiology for Funeral Service is designed to introduce the student to the principles of microbiology as they relate to funeral service including the role of diseases and types of pathogens and microbes which will infect and attack the human body. Study will include issues pertaining to both the spread of infectious agents, as well as their control.

Pre-requisites: Successful completion of BIO 111 and FSE 101 with a minimum grade of "C"

FSE 209. Pathology for Funeral Service. 3 Credits.
Pathology for Funeral Service introduces the principles of pathology, especially as it can be applied in embalming and restorative art processes. Special emphasis will be placed on tissue pathology and major causative agents of death.
Pre-requisites:, Successful completion of BIO 103, FSE 101 and FSE 210 with a minimum grade of "C" and Reading Proficiency.

FSE 208. Funeral Service Seminar. 3 Credits.
Funeral Service Seminar provides comprehensive preparation and completion of the International Conference of Funeral Service Examining Board Incorporated National Board Examination (NBE).

FSE 212. Embalming II. 3 Credits.
Embalming II is an advanced study of the techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities, and various embalming treatments.
Pre-requisite: Successful completion of FSE 210 with a minimum grade of C and above. **Co-requisite** :FSE 205 .

INTERIOR DESIGN, AAS-T

The Associate in Applied Science degree in Interior Design programs prepares students for careers in interior design or transfer to a four-year institution. The curriculum emphasizes a strong foundation in visual art skills, architecture and space planning. Utilizing these foundations, students develop creative projects using a systematic approach to the design processes.

The coursework for the interior design program includes solving interior design-related problems by developing free-hand and drafting skills, computers skills and oral presentation skills. Graduates will be familiar with local and national trade, professional and industry resources. Issues in sustainable and universal design are also explored within the studio environment. Individuals who are interested in this program should have a strong desire to work with people, enjoy functional problem solving and appreciate the impact of design in our environment. Previous drawing, design or drafting courses are also helpful.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ART 154	Architectural Graphics and Technology I	3
ART 151	Interior Design I	3
ART 131	Computer Art Studio	3
ART 107	Design I	2
ART 109	Drawing I	3
	Total Semester Credit Units	14

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ART 186	Building Systems and Construction for Interior Designers	3
ART 251	Interior Design II	3
ART 150	Design Communication for Interior Design and Architecture	3
ART 151	Interior Specifications, Materials, and Methods	3
ART 108	Design II	2
ENG 101	College Composition I	3
	Total Semester Credit Units	17

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
ART 252	Interior Design III	3
ART 287	Architectural Graphics and Technology II	3
ART 153	History of Cultural Environments I	3
MAT 135	Pre-Calculus3 Credit Hours	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Units	15

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
ART 253	Interior Design IV	3
ART 254	History of Cultural Environments II	3
ART 102	Art History - 1300 to Present	3
ECO 201	Macroeconomics	3
ART 152	Lighting Design	3
	Total Semester Credit Units	15

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

MAT 135 - Pre-Calculus **3Credits**

This course is intended to provide algebra skills necessary for Calculus. Topics include exponential, logarithmic, polynomial, and rational functions; polynomial and rational inequalities; systems of equations; sequences and series;

ART 102. Art History - 1300 to Present 3 Credits
Art History - 1300 to Present is a survey of art after 1300 C.E. Works of art and characteristics of artistic styles are presented and discussed as manifestations of influential ideas from the following periods or styles: Proto-Renaissance, Early Italian Renaissance, Early and Late Northern Renaissance, High Renaissance, Mannerism, Baroque, Rococo, selected 19th and 20th Century styles, and two or more Non-Western cultures.
Prerequisite: Reading Proficiency.

ART 107. Design I. 2 Credits.
Emphasis on principles and elements of design through a series of assigned problems. Additional studio hours required.

ART 108. Design II. 2 Credits.
The study of color, exploring various color theories and the historical application through a series of problems. Additional studio hours required.
Pre-requisites: Successful completion of ART 107 with a minimum grade of "C" and Reading Proficiency.

ART 109. Drawing I 3 Credits.
Drawing I provides an introduction to drawing principles, construction, proportion, form, value, perspective, composition, tools, and media. Perception, visual sensitivity, and critical thinking are all stressed.

ART 131. Computer Art Studio. 3 Credits
Computer Art Studio introduces students to the most common graphic software programs. Students will learn to navigate through the operating system and will gain basic experience with drawing, photo-imaging and page-layout applications.

ART 131. Computer Art Studio. 3 Credits
Computer Art Studio introduces students to the most common graphic software programs. Students will learn to navigate through the operating system and will gain basic experience with drawing, photo-imaging and page-layout applications.

ART 150. Design Communication for Interior Design and Architecture. 3 Credits
Design Communication for Interior Design and Architecture provides an introduction to graphic communication techniques as a way to communicate architecture and interior design processes and solutions. Utilizing traditional and digital methods, students will gain experience in perspective drawing, rendering, sketching, layout, and composition.
Pre-requisite: Successful completion of ART 154 with a minimum grade of "C"

ART 151. Interior Design I. 3 Credits
Interior Design I introduces students to interior space planning and the application of basic design principles and color theory to interior environments. Emphasis is placed on architectural drafting and the design and selection of interior finishes, furniture, and other interior components.
Prerequisite: Prior or concurrent enrollment in ART 154 and Reading Proficiency.

ART 152. Lighting Design. 3 Credits

Lighting Design introduces students to the functional and technical aspects of designing interior environments utilizing artificial and natural lighting. Topics include: lighting sources, fixture selection, color and human response, lighting calculations, codes, and application of lighting principles to residential and commercial interior design projects.

Pre-requisites: Successful completion of ART 151 with a minimum grade of "C" and Reading Proficiency**.**

ART 153. History of Cultural Environments I. 3 Credits.

The history of furniture styles, decorative arts, and architecture from Mesopotamia to French Empire will be taught. The emphasis is on materials, techniques, and aesthetics that make environments unique within their historical cultural environments.

Prerequisite: Reading Proficiency.

ART 154. Architectural Graphics and Technology I. 3 Credits.

Architectural Graphics and Technology I introduces students to the fundamentals of architectural drafting using hand drafting techniques and computer-aided drafting software currently utilized in the architecture and interior design industries. Students will apply architectural graphic standards in the creation of floor plans, elevations, and construction documents.

Prerequisites: Reading Proficiency.

ART 186. Building Systems and Construction for Interior Designers. 3 Credits.

This course explores building construction, systems and technology and their relationship to design development and project completion.

Prerequisite: Reading Proficiency.

ECO201 Macroeconomics 3 Credits

This course introduces the basic principles of economics, with emphasis upon macroeconomic theory and analysis. Topics covered in this course include the scope and nature of economics, ideology and structure of the American economy, national income and employment theory, business fluctuations, money and banking, fiscal and monetary policies and economic growth.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

ART 251. Interior Design II. 3 Credits.
Interior Design II focuses on creating functional and aesthetically pleasing commercial and residential interiors using a systematic approach to the design process. Special emphasis is placed on commercial and residential planning guidelines and the impact of building and life safety codes on interior environments.
Pre-requisites: Successful completion of ART 154 and ART 151 with a grade of "C" or better
Corequisite: ART 150.

ART 252. Interior Design III. 3 Credits
This course is an in-depth study of interior design emphasizing the influence of abstract design, universal design, global design, and sustainable practices on the built environment. A systematic approach to design processes will be used to develop projects that apply knowledge of space planning, principles and elements of design, color theory, and visual art skills in two dimensional and three dimensional design. Additional studio hours required.
Pre-requisites: Successful completion of ART 251 with a minimum grade of "C" and Reading Proficiency.

ART 253. Interior Design IV. 3 Credits
This course is an advanced study and application of the problem solving approach to design of the built environment. This course will also introduce students to the ethical standards and business procedures of the interior design industry. Additional studio hours required.
Pre-requisites: Successful completion of ART 252 with a minimum grade of "C" and Reading Proficiency.

ART 254. History of Cultural Environments II. 3 Credits
This course is a continuation of the history of furniture, decorative arts, and architectural elements from Tudor England to current times. The emphasis is on materials, techniques, and aesthetics that make environments unique within their historical cultural environments.
Pre-requisites: Successful completion of ART 153 with a minimum grade of "C" and Reading Proficiency.

ART 287. Architectural Graphics and Technology II. 3 Credits
Architectural Graphics and Technology II builds upon previous computer-aided interior design knowledge and introduces students to methods for utilizing building information modeling (BIM) software to create interior design drawings. Students will create presentation drawings, construction documents, schedules, and construction details for interior environments utilizing BIM software.
Pre-requisites: Successful completion of ART 154, ART 251 both with minimum grades of "C", and Reading Proficiency.

FOOTWEAR &ACCESSORIES DESIGN, AAA

The Footwear and Accessories Design program is dedicated to providing students with a broad-based liberal arts education combined with an effective and efficient practical career-oriented preparation for the accessories industry (inclusive but not limited to handbags, footwear, performance footwear, belts, small leather goods). Students develop aesthetic, intellectual, analytical, and technology abilities. Our programs stress the required disciplines of traditional design and technical skill sets along with product development, creative problem solving, and commercial application skills.

1st Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
FAD 111	Leather and Materials Technology	2.5
FAD 121	Accessories Design and the Human Anatomy	2
FAD 133	Footwear Design I	3
FAD 143	Handbag Design I	3
LD 113	Manipulating Leather: Volume and Texture	2
ENG 101	English Composition I	3
FRE 111	French I	3
	Total Semester Credit Units	18.5

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
FAD 134	Footwear Design II	3
FAD 144	Handbag Design II	3
FAD 262	Technical Drawing for Accessories	2
PH 272	Photoshop I for Photographers	2
HIS 112	History of Western Art and Civilization: Renaissance to the Modern Era	3
MAT 142	Geometry and the Art of Design	3
	Total Semester Credit Units	16

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
FAD 231	Boot Design	2.5
FAD 243	Belt Design	2
PHO221	Digital Sketching and Comping for the Illustrator	3
CMM 241	Professional Speech Communication	3
ECO 141	Macroeconomics	3
	Total Semester Credit Units	11.5

4th Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
FAD 228	Accessories CAD	2
FAD 242	Advanced Handbag Construction	2.5
FAD 263	Rendering for Accessories	2.5
FAD 113	Fundamentals of Design I: 2D and Color	1.5
HIS 213	Rome: A Cultural History in Painting, Sculpture, and Architecture	3
FAA 114	Fundamentals of 3D Design	1.5
FAA 147	The Forensics of Fiber Analysis	3
	Total Semester Credit Units	16

FAD 111 — Leather and Materials Technology 2.5 Credits

Processes in the development of leathers, reptiles, plastics, and other textiles are analyzed. Emphasis is on the function and utilization of each for handbags, footwear, and related accessories

FAD 121 — Accessories Design and the Human Anatomy 2 Credits

Students study the components of the foot, spine, and hand to understand the relationship between anatomical structure and the design of footwear, handbags, and gloves. Students learn to create functional and fashionable accessories that are anatomically and ergonomically correct.

FAD 133 — Footwear Design I 3 Credits

The basic concepts of footwear design are introduced and the history and types of footwear are discussed. Students develop skills for working with a last and learn patternmaking, sewing, construction, and finishing techniques for closed shoes.

FAD 143 — Handbag Design I 3 Credits

The skills to design and produce handbags are taught. Students become familiar with patternmaking techniques, machinery and equipment, and the various styles in handbag design. They learn how to translate original concepts into finished products.

FAD 165 — Sketching Accessories 2.5 credits

For one-year Accessories Design students. This accelerated course introduces the various areas of accessory design, including handbags, gloves, shoes, hats, and belts. Students learn to draw and render

FAD 228 — Accessories CAD 2 Credits

This course introduces students to Adobe Illustrator, which is used as a CAD tool for designing accessories. Auxiliary software includes Adobe Photoshop current materials and textures applicable to today's market.

FAD 134 — Footwear Design II **3Credits**

Students analyze last styles, leathers, and components in terms of functionality and design. They continue to develop patternmaking skills by designing and making mules and oxfords.
Pre-requisite: Successful completion ofFAD133 with a minimum grade of "C".

FAD 144 — Handbag Design II **3 Credits**

Patternmaking and sample making techniques are developed further as students design and construct frame and box bags.
Pre-requisite: Successful completion of FAD 143 with a minimum grade of "C".

FAD 262 — Technical Drawing for Accessories **2 Credits**

Students learn black line graph techniques and develop specification sheets suitable for industry. Students sketch original and existing accessories designs, draw major core silhouettes of shoe lasts, and develop templates.

PHT 272 — Photoshop I for Photographers **2 Credits**

Students engage in a comprehensive study of Adobe Photoshop tools using the Macintosh platform. Methods and management techniques for scanning, creation of selections, layers, color correction, and basic image manipulation are studied.

FAD 231 — Boot Design **2.5 Credits;**

Students design and construct three different boot types: cowboy, Chelsea, and thigh-high. Boot detailing, advanced patternmaking, grading, and lasting techniques are taught.
Pre-requisite: Successful completion of FAD 134 with a minimum grade of "C".

FAD 227 — Introduction to Line Building **2 Credits**

Using a specific theme or season, students learn the principles and techniques of line building by designing and producing a collection of accessories. Emphasis is on workmanship, fabrication, and execution of designs. **Corequisite:** FAD 134 and FAD 144

FAD 243 — Belt Design **2.5 Credits**

The exploration of the design of the belt as a fashion and functional accessory is presented. Students acquire the skills needed to make several different kinds of belts.
Pre-requisite: Successful completion of FAD 111 and FAD 121with a minimum grade of "C".

PHT 221 — Digital Sketching and Comping for the Illustrator **1.5 Credits**

Using Adobe Photoshop, students learn to create digital artwork and type; make selections; file, retrieve, scan, print, edit, and retouch photography and artwork; and manipulate, color, and combine images in order to produce high-quality sketches and comprehensives.
Pre-requisite: Successful completion of PHT 272. with a minimum grade of "C"

FAD 228 — Accessories CAD **2 Credits**;
This course introduces students to Adobe Illustrator, which is used as a CAD tool for designing accessories. Auxiliary software includes Adobe Photoshop.

FAD 242 — Advanced Handbag Construction **2.5 credits**
Using such techniques as the pillow gusset/bottom and strip construction, students explore new handbag designs. Advanced patternmaking skills are taught. Emphasis is on detailing. **Pre-requisite:** Successful completion of FAD 144 with a minimum grade of "C".

FAD 263 — Rendering for Accessories **2.5 Credits**
Students learn to design accessories such as handbags, shoes, belts, hats, and gloves. They draw and render materials and textures appropriate for today's accessories market. Students become familiar with current trends and utilize research for sources of inspiration. **Pre-requisite:** Successful completion of FAD 262 with a minimum grade of "C".

FAA 113 — Fundamentals of Design I: 2D and Color **1.5 Credits**
Students explore the principles of two-dimensional design and color for the designer and fine artist, including the study of line, shape, positive and negative space, texture, and composition.

DE 101 — Principles of Display and Exhibit Design: Small Scale **2 Credits**
For students not majoring in Visual Presentation and Exhibition Design. Basic hands-on display methods used in visual merchandising and an understanding of two- and three-dimensional design practices and materials.

FAA 114 — Fundamentals of 3D Design **1.5 Credits**
The concepts basic to all three-dimensional design are studied: definition of space through the use of line, planes, and solid forms; manipulation of mass, volume, and void; the use of structural systems; the relationship of surface and color to form; and the importance of proportion and scale, light, and shadow.

ENG 101 - English Composition I **3Credts**
A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ACT 111 — Advertising and Promotion **3 Credits**
For Advertising and Marketing Communications, Fabric Styling, Fashion Business Management, and Textile Development and Marketing students. Concepts, perspectives, and methods for the development and implementation of integrated marketing communications programs for producers, manufacturers, and retailers are analyzed and critiqued.

ENG 241 — Professional Speech Communication 3 **Credits**
Communication theory is discussed and applied to various areas such as verbal and nonverbal communication and listening in professional contexts. Among the activities the course focuses on are interviews and presentations. Videotaping is used to facilitate learning and assessment. **Prerequisite:** Successful completion ofENG121 with a minimum grade of "C".

MAT 142 — Geometry and the Art of Design **3 Credits**
A contemporary primer of geometric topics that expand the concepts of shape and space, this course presents some of the established and emerging ways geometry can provide tools and insights for artists and designers. Included are a variety of visual phenomena such as fractals, knots, mazes, symmetry, and the golden ratio.

FAA 147 — The Forensics of Fiber Analysis **3 Credits**
This course focuses on the fundamental concepts in forensic science by examining sample evidence collected from mock crime scenes. Chemical and spectroscopic techniques are used to introduce the concepts of forensic fiber analysis.

ECO 141 — Macroeconomics **3 Credits**
Introduction to basic principles and characteristics of economic systems. Primary emphasis is on macroeconomic issues, including national income determination, monetary and fiscal policy, and current economic problems.

FAA 213 - Rome: A Cultural History in Painting, Sculpture, and Architecture 3 Credits
Note: Course is conducted in English. Conducted in Rome, this course examines the history of painting, sculpture, and architecture from antiquity to the present. Through field trips, lectures, and discussions, students are introduced to style, iconography, technical innovation, geography, and the cultural, social, economic, and political forces that have shaped Rome's visual arts.

FRE 111 — French I **3 Credits**
This introductory course enables students with no background in French to communicate with French-speaking people. The basic skills of speaking, reading, and writing in French are established and the cultures where French is spoken are introduced. Teacher-instructed multimedia laboratory sessions reinforce skills learned in the classroom.

HIS 112 -History of Western Art and Civilization: Renaissance to the Modern Era 3 **Credits**
Presents the history of Western art and civilization from the early Renaissance to the modern era. Illustrated lectures explore painting, sculpture, and architecture in relation to pertinent religious, political, economic, and social conditions.

FAD 293 — Developing a Successful Portfolio 3 Credits

Working with industry design critics, students learn the fundamentals of assembling a professional portfolio for employment in the accessories industry. Using Adobe Photoshop and Adobe Illustrator, they explore marker rendering, theme pages, and print work. Areas of specialization are showcased.

Pre-requisite: Successful completion of FAD 111, FAD 121, and FAD 165with a minimum grade of "C".

FOOTWEAR & ACCESSORIES DESIGN DIPLOMA PROGRAM

The Footwear & Accessories Design major provides the knowledge and skills to prepare students for positions in design, product development, merchandising, and pattern- and sample-making.

Students who successfully complete the Footwear & Accessories Design Diploma will be able to:

- Demonstrate the ability to identify, analyze, and elect appropriate materials for fabricating accessories.
- Identify the anatomy of the foot and hand and apply ergonomics to the design of handbags and footwear.
- Illustrate technical specification for handbags, footwear, and belts.
- Construct innovative designs in handbags, footwear, and belts from concept to finished sample.
- Develop critical thinking skills through research projects, design exploration, and presentations.
- Illustrate total design concepts from ideation to finished rendering, by hand and by computer.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
FAD 111	Leather and Materials Technology	2.5
FAD 121	Accessories Design and the Human Anatomy	2
FAD 133	Footwear Design I	3
FAD 143	Handbag Design I	3
FAD 165	Sketching Accessories	2.5
FAD 228	Accessories CAD	2
	Total Semester Credit Units	15

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
FAD 134 -	Footwear Design II	3
FAD 144 -	Handbag Design II	3
FAD 227 -	Introduction to Line Building	2
FAD 243 -	Belt Design	2.5
FAD 293 -	Developing a Successful Portfolio	3
FAD 231	Boot Design	2.5
	Total Semester Credit Units	16

Total Credits: 30.5

FAD 111 — Leather and Materials Technology 2.5Credits

Processes in the development of leathers, reptiles, plastics, and other textiles are analyzed. Emphasis is on the function and utilization of each for handbags, footwear, and related accessories.

FAD 121 — Accessories Design and the Human Anatomy 2Credits

Students study the components of the foot, spine, and hand to understand the relationship between anatomical structure and the design of footwear, handbags, and gloves. Students learn to create functional and fashionable accessories that are anatomically and ergonomically correct.

FAD 133 — Footwear Design I 3 Credits

The basic concepts of footwear design are introduced, and the history and types of footwear are discussed. Students develop skills for working with a last and learn patternmaking, sewing, construction, and finishing techniques for closed shoes.

FAD 143 — Handbag Design I 3 Credits

The skills to design and produce handbags are taught. Students become familiar with patternmaking techniques, machinery and equipment, and the various styles in handbag design. They learn how to translate original concepts into finished products.

FAD 165 — Sketching Accessories 2.5 credits

For one-year Accessories Design students. This accelerated course introduces the various areas of accessory design, including handbags, gloves, shoes, hats, and belts. Students learn to draw and render current materials and textures applicable to today's market.

FAD 228 — Accessories CAD 2 Credits

This course introduces students to Adobe Illustrator, which is used as a CAD tool for designing accessories. Auxiliary software includes Adobe Photoshop.

FAD 134 — Footwear Design II **3 Credits**
Students analyze last styles, leathers, and components in terms of functionality and design. They continue to develop patternmaking skills by designing and making mules and oxfords.
Pre-requisite: Successful completion of FAD 133 with a minimum grade of "C".

FAD 144 — Handbag Design II **3 Credits**
Patternmaking and sample making techniques are developed further as students design and construct frame and box bags.
Pre-requisite: Successful completion of FAD 143 with a minimum grade of "C".

FAD 227 — Introduction to Line Building **2 Credits**
Using a specific theme or season, students learn the principles and techniques of line building by designing and producing a collection of accessories. Emphasis is on workmanship, fabrication, and execution of designs.
Corequisite(s):FAD 134 and FAD 144

FAD 231 — Boot Design **2.5 Credits**
Students design and construct three different boot types: cowboy, Chelsea, and thigh-high. Boot detailing, advanced patternmaking, grading, and lasting techniques are taught.
Pre-requisite: Successful completion of FAD 134 with a minimum grade of "C".

FAD 243 — Belt Design **2.5 Credits**
The exploration of the design of the belt as a fashion and functional accessory is presented. Students acquire the skills needed to make several different kinds of belts.
Pre-requisite: Successful completion of FAD 111 and FAD 121 with a minimum grade of "C".

FAD 293 — Developing a Successful Portfolio **3 Credits**
Working with industry design critics, students learn the fundamentals of assembling a professional portfolio for employment in the accessories industry. Using Adobe Photoshop and Adobe Illustrator, they explore marker rendering, theme pages, and print work. Areas of specialization are showcased.
Pre-requisite: Successful completion of FAD 111, FAD 121, and FAD 165 with a minimum grade of "C".

WATER ENVIRONMENTAL TECHNOLOGY, AAS

The Water Environmental Technology degree is designed to address the education requirements of operators working in the water and wastewater industry and students interested in entering the water and wastewater industry. Courses are designed to prepare students for entry-level employment in water and wastewater and for those administered by professional associations within the water and wastewater industry. Classes are built around practical

examples of real-world scenarios, demonstrations, and field trips to maximize understanding of subject matter.

This Program is for students interested in entering the field of Water Environmental Technology. Current operators working on increasing their certification level through attainment of coursework.

Students graduating with an AAS degree will be immediately qualified for employment opportunities, including entry-level positions with municipal and industrial water treatment facilities, municipal and industrial wastewater treatment facilities, municipal and industrial water distribution systems, municipal and industrial wastewater collection systems, municipal, industrial, and commercial water laboratories, and municipal, industrial, and commercial wastewater laboratories. They will be well-advanced along the path for state operator certification, which opens many employment doors for you. Potential employers will recognize your educational efforts as being vital to long-term success in this industry, which will give you a significant advantage over other entry-level personnel.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
WRT100	Introduction to Water Resources	3
WRT140	Water Quality for Treatment Industry	5
WRT115	Water Technology Calculations	3
WRT110	Principles of Water Treatment Plant Operations	3
MAT122	Intermediate Algebra	3
	Total Semester Credit Units	17

2nd Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
WRT204	Water/Wastewater Mechanical Systems, Power, and Instrumentation	3
WRT121	Operation of Wastewater Treatment Plants	3
WRT131	Wastewater Collection Systems Operation and Maintenance	3
WRT190A	Water Resources Technologies Seminar	1
MAT122	Intermediate Algebra	3
ENG101	English Composition I	3
	Total Semester Credit Units	16

3rd semester (Sophomore)		
Course Code	**Course Title**	**Credit Unit/ Hours**
BIO105	Environmental Biology	4
CHM 130	Fundamental Chemistry	3
CHM 130L	Fundamental Chemistry Laboratory	1
WRT 153	Environmental Law and Regulations	3
ECO 211	Macroeconomic Principles	3
COM110	Interpersonal Communication	3
WRT 240L	Water Quality Field Techniques	1
	Total Semester Credit Units	14

4th semester (Sophomore)		
Course Code	**Course Title**	**Credit Unit/ Hours**
WRT190	Water Resources Technologies Seminar	1
ENG 102	English Composition II	3
WRT152	Water Resources Field Investigations I: Groundwater and Surface Water	3
WRT 240	Water Quality	3
WRT 221	Water and Wastewater Treatment Plants Administration	3
	Total Semester Credit Units	17

Summer		
Course Code	**Course Title**	**Credit Unit/ Hours**
COM110	Public Speaking	3
WRT270A	Water Resources Internship	3
PHI 101	Introduction to Philosophy	3
	Total Semester Credit Units	9

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 102 - English Composition II **3 Credits**

A composition course in argumentative writing, including invention, organization, style, and revision. Critical reading and thinking will be addressed though students' writing. Research skills and documentation will be introduced.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better**.**

MAT122 Intermediate Algebra **3 Credits**

Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions.

WRT100 Introduction to Water Resources **3 Credits**

Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists.

WRT115 Water Technology Calculations 3 Credits
Application of water technology formulas for operation and maintenance of water/wastewater plants and distribution and collections systems. Includes operator examination preparation and discussion of best practices in water technologies given the results of the calculations.
Prerequisites or Corequisites: A grade of C or better required in WRT100 or permission of Program Director.

WRT110 Principles of Water Treatment Plant Operations 3 Credits
Principles in the safe and effective operation and maintenance of drinking water treatment plants, reservoir management and intake structuring. The source of water, basic water laboratory test procedures and calculations also covered.
Prerequisites or Corequisites: A grade of C or better required in WRT100 or permission of Program Director.

WRT204 Water/Wastewater Mechanical Systems, Power, and Instrumentation 3 Credits
Maintenance of facilities and equipment in both water and wastewater systems. Principles of basic electricity, electrical circuits, motors, transformers, and process control instrumentation.

WRT121 Operation of Wastewater Treatment Plants 3 Credits
Safe and effective operation and maintenance of wastewater treatment plants. Overview of treatment processes and laboratory testing used in wastewater treatment plants. Principles and processes involved in waste treatment ponds, disinfection and chlorination process.
Pre-requisites: Successful completion of WRT100 with a minimum grade of "C".

WRT131 Wastewater Collection Systems Operation and Maintenance 3 Credits
Overview of wastewater collection systems with an emphasis on inspection and cleaning of sewer systems. Safety considerations, maintenance and underground repair procedures also covered.
Pre-requisites: Successful completion ofWRT100 and WRT115with a minimum grade of "C"., or permission of Program Director).

WRT190A Water Resources Technologies Seminar 1 Credit
Interaction with other students and professionals in the water resources technologies industry. Stress placed on sharing knowledge and demonstrating understanding through discussion of current issues in the industry, operational tasks, and emerging issues.

WRT134 Water Distribution System Operation and Maintenance 3 Credits
Safe and effective operation and maintenance of water distribution systems. Water contaminants, disinfection and chlorination in addition to development of a plant safety plan.
Pre-requisites: Successful completion ofWRT100 and WRT115with a minimum grade of "C"., or permission of Program Director.

CIS105 Survey of Computer Information Systems 3 Credits

Overview of computer technology, concepts, terminology, and the role of computers in business and society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes uses of application software and the Internet for efficient and effective problem solving. Exploration of relevant emerging technologies.

WRT103 Industrial Pretreatment 3 Credits

Industrial wastewater treatment involves complex chemical, physical, and biological processes. Meeting water quality standards require more sophisticated and sensitive wastewater treatment processes. Chemical precipitation processes must be improved and refined to meet the current standards. Reverse osmosis, ultrafiltration, and chemical neutralization will be used more extensively. Wastewater treatment plant operators at industrial facilities must have a firm understanding of existing and upcoming technologies.

CRE101 College Critical Reading and Critical Thinking 3 Credits

Develop and apply critical thinking skills through critically reading varied and challenging materials. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks.

Pre-requisites: Successful completion of ENG101with a minimum grade of "C".

BIO105 Environmental Biology 4 Credits

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Field trips may be required at students' expense.

CHM130 Fundamental Chemistry 3 Credits

A survey of the fundamentals of general chemistry. Emphasis on essential concepts and problem solving techniques. Basic principles of measurement, chemical bonding, structure and reactions, nomenclature, and the chemistry of acids and bases. Preparation for students taking more advanced courses in chemistry.

CHM130L Fundamental Chemistry Laboratory 1 Credit

Laboratory experience in support of CHM130.

Pre-requisites or Corequisites: CHM130

WRT153 Environmental Law and Regulations 3 Credits

Environmental law may be the one institution standing between us and planetary exhaustion. It is also an institution that needs to be reconciled with human liberty and economic aspirations. This course considers these issues and provides a tour though existing legal regimes governing pollution, water law, endangered species, toxic substances, environmental impact analyses, and environmental risk.

ECO211 Macroeconomic Principles 3 Credits

A descriptive analysis of the structure and functioning of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies.

WRT240 Water Quality 3 Credits

Fundamental chemical and physical factors involved in evaluating water quality. Water quality deterioration from landfills, underground storage tanks, and hazardous waste. Sampling techniques of groundwater, soil, and surface water. Quality assurance, quality control, and data processing techniques included.

Pre-requisites: Successful completion ofWRT140with a minimum grade of "C"., or permission of Department or Division.

WRT240L Water Quality Field Techniques 1 Credit

Field exercises to acquire water quality data and service data gathering equipment. Safety procedures stressed.

Prerequisites WRT240with a minimum grade of "C"., or permission of Department or Division

WRT221 Water and Wastewater Treatment Plants 3Credits

Wastewater treatment - historical background. Municipal and industrial wastewater. Treatment of drinking water. Environmental issues. Bioreactors. Microbiological processes. An overview of methods for waste water treatment. Sedimentation and sludge treatment. Modelling, design and optimisation of the activated sludge process. An introduction to automatic control and how to control wastewater treatment plants. Visit to a municipal wastewater treatment plant and a small plant.

COM110 Interpersonal Communication 3 Credits

Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships.

PHL 101 Introduction to Philosophy 3 Credits

General consideration of human nature and the nature of the universe. Knowledge, perception, freedom and determinism, and the existence of God.

WRT270AC Water Resources Internship 3 Credits

The internship programme is designed to provide a framework which allows students from diverse academic backgrounds to gain an insight into the Practical water treatment plants and water cooperation to gain a firsthand information on water industries.

LIBRARY AND INFORMATION TECHNOLOGY, AAS

Associates of Applied Science in Library Information Technology curriculum combines classroom lectures, hands-on exercises, and field trips. Graduates of this degree will be qualified to work as library assistants or technicians. Becoming a library assistant or technician is a great way to gain experience in the field while pursuing higher education. This position often requires both a certification and an associate degree, but occasionally having only one instead of both is acceptable.

The LTA Associate in Applied Science is a good step regardless of any position you may wish to hold in an academic library

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
LIB 101	Introduction to Libraries and the Information Age	3
LIB 114	Essential Library Workplace Skills	3
ENG 101	Composition I	3
CIS 115	Comp and Info Systems	3
EVS 101	Environmental Science	4
	Total Semester Credit Units	16

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
LIB 113	Acquisition of Library Materials	3
LIB 220	Serving the Public in Today's Libraries	4
COM 110	Fundamentals of Speech Communication	3
MAT 135	Statistics	4
	Total Semester Credit Units	14

3rd Semester(Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
LIB 210	Introduction to Cataloging and Classification	4
LIB 240	Library Technology	3
LIB 112	Introduction to Reference Services	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Units	13

4th Semester (Sophomore)		
Course Code	Course Title	Credit Unit/ Hours
LIB 260	Library Practicum (Offered in fall and spring)	4
MAN220	Organizational Behavior	3
ANT 202	Cultural Anthropology	3
POL 115	State and Local Politics	3
MKT 221	Principles of Marketing	3
	Total Semester Credit Units	16

LIB 111Intro to Libraries & the Information Age 3 Credits

Introduction to different types of libraries and the information industry. The role of the Library Technical Assistant (LTA) in all areas of the library profession is explored. An overview of basic library and information research methods and tools, both print and digital format is presented.

LIB 114Essential Library Workplace Skills 3 Credits

Overview of the skills necessary to communicate effectively with co-workers and the public, work in team settings, deal with a variety of personality types, resolve conflicts, and become an effective part of the library workforce.

ENG 101 English Composition I 3 Credits

Introduces key concepts in rhetoric and writing, including situation and context, audience, genre, purpose, and persuasion. Students apply these concepts in writing projects that demonstrate how reading and writing are embedded in multi-faceted academic, personal, social, political, and/or professional purposes. These writing projects unfold through a deliberate process of inquiry, feedback, and revision.

MAT 135 Statistics 4 Credits.

Students will be introduced to elements of descriptive and inferential statistics. Topics include communication with data descriptions and graphs; probability principles and their use in developing probability distributions; binomial, normal, student-t, chi-square, and F distributions; hypothesis testing; estimation; contingency tables; linear regression and correlation; and one-way ANOVA

ENS 101 - Introduction to Environmental Science 3 Credits.

Explores the inter-relationships between humans and the Earth's ecosystems. Fundamentals of ecology, water resources, populations, energy, climate, and nutrient cycling will be covered, as well as the impact of human use and management of the earth's land, water, and air resources. For students needing a lab, ENVS 102 serves as the accompanying laboratory.

ENS 102 - Introduction to Environmental Science Laboratory 1 Credit.

Provides students with hands-on laboratory experiences, field trips, and special assignments to demonstrate the principles, processes, techniques, and technologies of the study of natural environmental systems and solutions to environmental challenges. Students are required to attend a maximum of five off-campus or field activities during the scheduled laboratory period. **Pre-requisite:** Successful completion of ENV 101with a grade of "C" or better.

CIS 115 Understand Computers/Information/Systems 3 Credits

An overview of the computing field and its typical applications. Covers key terminology and components of computer hardware, software and operating systems. Other topics include systems development methods, management information systems, programming languages, communications, networks, application software, the Internet and career opportunities. Microcomputer applications include word processing, spreadsheet, database, and presentation software.

LIB 113Acquisition of Library Materials 3 Credits.

Introduces the Library Technical Assistant to the process of how to acquire materials from the decision to obtain them to the time they are ready to be cataloged. Automation processes and techniques are incorporated.

Pre-requisite: Successful completion of LIB 101 with a grade of C or better or consent of instructor.

LIB 115Readers Advisory 3 Credits

Introduces genres of literature and techniques for patron interaction. Topics include library collection analysis, display creation, bibliographic tool development and reading programs.

Pre-requisite: Successful completion of LIB 101with a grade of C or better or equivalent or consent of instructor.

COM 110 Fundamentals of Speech Communication 3 Credits

A variety of experiences that develop basic concepts of the oral communication process. The class includes communication theory as well as speech preparation and delivery. Highly recommended: Prior to enrollment, student should have A) a satisfactory score, as determined by the English faculty, on an English Composition entrance test, and B) evidence of having met the Reading Competency Requirement.

LIB 112Introduction to Reference and Information Services 3 Credits

Introduction to reference and information services for the Library Technical Assistant. Includes basic tools needed to answer directional and ready reference questions. Print and electronic resources, interview techniques, and virtual reference services are discussed.

Pre-requisite: Successful completion of LIB 101 with a grade of C or better or consent of instructor.

ACT 110Accounting Procedures 3 Credits

The accounting cycles of service organizations and merchandisers focusing on the recording of business transactions and the preparation of financial statements for such organizations. Includes specific accounting concepts relating to current assets, long-term assets, current liabilities, payroll and the operations of corporations.

SOC 110 Introduction to Sociology 3 Credits

An introduction to the concepts and theories necessary for a scientific understanding of our social world. Topics include sociological research, culture and socialization, social deviance, stratification and inequality (social class, race/ethnicity, and sex/gender), and social institutions (family, education, religion, and the economy).

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development,

intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

POL 115 State and Local Politics 3 Credits

Students will be introduced to the basic principles of state constitutions and the institutions they create. Additional topics will include the structure and function of state legislatures, courts and chief executives. The structure and function of city, county and other local governments is also considered as is the role of political parties, pressure groups and public opinion.

ANT 202 Cultural Anthropology 3 Credits

Comparative study of human societies and cultures of the world; cross-cultural investigation of social organization and political, economic, religious, and family systems. Writing assignments, as appropriate to the discipline, are part of the course.

MAN220Organizational Behavior 3 Credits

This course provides a comprehensive analysis of individual and group behavior in organizations. Its purpose is to provide an understanding of how organizations can be managed more effectively and at the same time enhance the quality of employees work life. Topics include motivation, rewarding behavior, stress, individual and group behavior, conflict, power and politics, leadership, job design, organizational structure, decision making, communication and organizational change and development.

LIB 260Library Practicum 4 Credits

Capstone course integrating the application of all course work in the Library Technology Program. Provides a forum for discussing issues related to working in the library field, guidance in searching for jobs, and instruction about how to create a professional portfolio.
Pre-requisite: LIB 112, 113, 114, 115, 120, 210, 220, 230, 240, all with a grade of C or better, and consent of instructor.

MKT 221Principles of Marketing 3 Credits

Study of satisfying customer needs for goods and services. Marketing environments, marketing planning, and marketing research are covered. Target market identification, competitor analysis and marketing strategy are modeled.

LIB 210Intro to Cataloging& Classification 3 Credits

The role of Library Technical Assistant (LTA) in descriptive and subject cataloging and processing of print and non-print materials. Emphasis is on the organization of information resources in print and non-print formats. Includes the philosophy, tools and techniques for performing cataloging.
Pre-requisite: Successful completion of LIB 101 with a grade of C or better or consent of instructor.

LIB 240Library Technology 3 Credits

Introduction to technology applications for library functions and services.

Pre-requisite: Successful completion of LIB 101 or equivalent, or consent of instructor.

LIB 220Serving the Public in Today's Libraries 3 Credits

Role of the Library Technical Assistant (LTA) in serving the public including programming, creating displays, basic circulation desk duties, shelf maintenance, interlibrary loan activities, registering and effective interaction with patrons. Automated and online systems are emphasized.

Pre-requisite: Successful completion of LIB 101 with a grade of C or better or consent of instructor.

RENEWABLE ENERGY TECHNOLOGY, A.A.S

The Renewable Energy Technology Associate in Applied Science (NAAC RET A.A.S.) degree provides students with a broad and comprehensive technical education in the rapidly growing field of renewable energy. The RET A.A.S. program focuses on developing skilled technicians who are prepared to enter the job market as entry-level installers, operators, or maintenance technicians for renewable energy technologies including grid-tied solar photovoltaic, solar thermal, small wind, heat pump, micro hydroelectric and multiple bioenergy systems. The degree program has the flexibility to train students directly out of high school, as well as displaced workers who already possess a mechanical or electrical technical background.

The Renewable Energy Technology A.A.S. is a demanding curriculum for incoming students as there are strong math, biology, chemistry, physics, and electrical components to the program.

Graduates from the RET A.A.S. will be employed in an entry-level installers or maintenance technicians for renewable energy technologies including grid-tied solar photovoltaic, small wind, heat pump/geothermal, and bioenergy systems.

Required tools/equipment: Laptop, clipboard, safety glasses, work gloves, work boots (steel/safety toe), waterproof rubber boots (recommended), hard hat, rain gear (coat and pants/ bibs), and cold weather gear (insulated clothing).

Student Learning Outcomes

Upon Successful completion of this program, students will be able to:

- Describe basic social, political and economic driving forces impacting renewable energy resources and systems regionally, nationally and abroad
- Interpret system schematics and designs to safely connect renewable energy mechanical and electrical components
- Install, maintain, and troubleshoot renewable energy systems by developing problem-solving skills through critical thinking in both hands-on and written technical environments
- Work safely and responsibly in groups with diverse individuals

1st Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 101	Electrical Theory for Renewable Energy	4
RET 102	Renewable Energy Resources	3
RET 103	Renewable Energy Seminar	1
MAT 120	Finite Mathematics	3
ENG 101	English Composition I	3
CITA 101	Principles of Computers and Applications	3
	Total Semester Credit Units	14

2nd Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 150	Analysis Techniques for Renewable Energy	1
RET 151	Applied Hydraulics for Hydropower Generation	3
RET 125	Residential Electrification	3
CHM 120	General Chemistry I with Lab	4
PSY 101	Introduction to Psychology	3
COM 231	Public Speaking	3
	Total Semester Credit Units	17

summer		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET-209	Renewable Energy I: Energy Efficiency	3
RET-280	Renewable Energy/CWE	4
RET 226 -	Commercial Wind Systems-	3
	Total Semester Credit Units	10

3rd Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 210	Biomass Energy Resources	3
RET 231	Introduction to Solar Photovoltaics	3
PHY 107	Introduction to Physics	4
HIS 114 -	World Civilizations Since 1500	3
REC 221 or	Plumbing	3
REC 130	Light Framing.	3
	Total Semester Credit Units	16

4th Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
NAT 213	Basics of Geospatial Technology	1
RET 221	Introduction to Small Wind Systems	3
AUT 102	Metals (welding)	3
REC 260	Heating and Energy Systems.	3
RET 240	Introduction to Heat Pumps	3
FIL 185	Legal, Ethical and Social Environment of Business	2
	Total Semester Credit Units	15

5th Semester		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 290	Renewable Energy Capstone	6
RET-211	Renewable Energy II: System Fundamentals	3
RET-213	Renewable Energy III: Installation & Maintenance	3
RET-215	Renewable Energy IV: Systems Design	3
	Total Semester Credit Units	15

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

CIS-101 Introduction to Computers and Applications 3 Credits

Introduction to the fundamentals of computer use in business, including concepts of computer hardware, operating system and application software, elements of problem-solving. The course is designed to provide hands-on experience with the personal computer. Solutions to practical business problems are explored through the use of word processing, spreadsheet, and presentation software.

MAT 120 - Finite Mathematics 4 Credits

Description: Linear functions, matrices, systems of linear equations, sets and counting, probability, statistics, and mathematics of finance. Department-approved graphing calculator required. May not be taken under the P/NP option. Not for credit major/minor.

CHM 120 General Chemistry I with Lab 4 Credits

The topics discussed begin with physical and chemical property definitions and dimensional analysis. Chemical reactions and reaction stoichiometry are studied in the context of aqueous solutions. Types of aqueous reactions are investigated (i.e., acid/base, oxidation/reduction) as well as quantitative aspects of the reactions (i.e., molar solutions, dilutions, titrations, limiting reagents, reaction yields). Topics in gaseous-state chemistry and introduction to basic thermodynamics, quantum theory, electronic structure of atoms, basic chemical bonding, molecular geometry and molecular orbitals follow the reaction chemistry section.

PHY 107 - General Physics I. 4 Credits

Discover the fundamental concepts and methods of physics. Study the classical principles and their application to algebra-based mathematical analysis of physical problems. Analyze topics including mechanics (kinematics, laws of motion, force, momentum, and energy), fluids, and heat. Meets the requirements of career programs and transfer programs in liberal arts,

secondary education and health-related fields that require algebra-based general physics. Lab fees reduced for this course. See Course Fees

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

FIL 185 - Legal, Ethical And Social Environment Of Business 2 Credits

Emphasis on business ethics and corporate social responsibilities. Areas of concentration include contracts, torts, agency and business associations, government regulation of business, securities, labor, and employment law

HIS 114 - World Civilizations Since 1500 3 Credits

Explore the past and its impact on the present and the future. Examine global history from the Reformation to World War II to evaluate the networks and interactions that connected Europe, Asia, Africa, and the Americas. Analyze societal changes and continuities in culture, politics, economics, and diplomacy.

RET 101 – Basic Electricity for Renewable Energy: 4 Credits

Introductory course covering DC and AC electrical circuits as applied to renewable energy fields, including solar photovoltaics, small wind, micro hydroelectricity, biofuel generators, and standalone power systems (batteries and generators). Fundamental theoretical concepts will be intimately

RET 102 - Renewable Energy Resources: 3 Credits

A scientific examination of the energy field with emphasis on alternate energy sources; their technology and application will be covered in this course, in addition to present needs and future demands; conventional sources, biomass conversions; wind power; geothermal; solar and nuclear energy.

RET 125 - Residential Electrification. : 3 Credits

Design, installation, and troubleshooting of alternating current circuits used in residential construction. Circuit planning and layout as per national **electrical** code is emphasized. A set of hand tools is required for this course. 3 credits (2 lecture hours, 2 laboratory hours), spring semester

RET 151 Applied Hydraulics for Hydropower Generation 3 Credits

This course covers the basic concepts of water **hydraulics** as **applied** to **hydropower generation.** The course is introductory in nature and is intended to provide a basic review of fluid static and hydrodynamic conditions as **applied** to micro- and mini-hydropower generation systems.

RET 231 Introduction to Solar Photovoltaics 3 Credits

Covers the basic concepts of PV systems and their components, along with general sizing and electrical/mechanical design requirements. Also provides an overview of performance analysis and troubleshooting

NATR 213 - Basics of Geospatial Technology 1 Credit.

This course involves a basic introduction to geospatial technology with focus on the practical applications of geographic information (GIS) and global positioning systems (GPS) in mapping natural and renewable resources.

REC 221 – Plumbing 3 Credits

An overview of the **plumbing** trade including tools, skills, mathematics, nomenclature, science of fluids, cold and hot water distribution systems, and the drain-waste-vent system. The student will participate in the installation and testing of a residential **plumbing** system with special emphasis on setting of fixtures and trim ...

RET 226 - Commercial Wind Systems- 3 Credits

Commercial wind turbine systems are the focus of this course. The interoperation of the subsystems in a commercial wind turbine, the tracking and data acquisition using SCADA systems and the distribution of the generated power are covered in this course. The technician's role in the successful operation of the facility is another component of this course.

REC 260 - Heating And Energy Systems. 3 Credits

The study of heat transfer in conventional building materials and construction techniques for reducing **energy** consumption. Subjects covered will also include residential hot water, hot air, and steam **heating systems**. Sizing of **heating**/ cooling **systems** and selecting of peripheral components will be covered.

RET 240 - Introduction to Heat Pumps 3 Credits

Introduces the heat pump concept and related terminology. The course covers the maintenance and operation of water-to-water, water-to-air, ground-to-air, air-to-air, solar-assisted, geothermal, dual-fuel, and split systems, as well as packaged units. Defines balance points, coefficient of performance, energy efficiency ratio, and degree days. Covers components, controls, installation, checkout, and startup.

AUT 102 - Metals (welding) 3 Credits

Characteristics and properties of metals, metallurgy, fabrication, oxyacetylene and arc welding. TIG and MIG welding and other industrial processes.

HEA 150 - Advanced First Aid, CPR and AED 3 Credits

Examine the appropriate intervention skills to respond to emergencies such as recognition, access, assessment and management until more advanced personnel arrives. Identify and successfully demonstrate the components of cardiopulmonary resuscitation (CPR) and automatic defibrillator device (AED) and advanced first aid by a first responder. Successful completion of the course prepares students to take the Red Cross certification exam.

REC 130 - Light Framing. 3 Credits

Light framing and layout work encountered in residential construction are introduced in lecture sessions and practiced in laboratory settings, dealing with the construction and modification of light home and agricultural structures.

RET 210 Biomass Energy Resources 3 Credits

Biomass Energy Basics is **course** that enables participants to review, analyze, and evaluate opportunities in the rapidly expanding market for biopower and biofuel. In addition to gaining a working knowledge of the scientific, technological, and business aspects of **biomass energy**/fuel, participants will also learn ...

COM 231 - Public Speaking 3 Credits

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audio-visual support.

Pre-requisite(s): Successful completion of ENG 111 & ENG 112with a grade of "C" or better

RET 225 – Tower Climbing and Rescue 2Credits

The course is designed to give hands-on experience for those entering the residential wind turbine industry. Initial focus is on tower climbing standards, terminology of the tower climbing industry, and competent climber expetations and duties.

RET-280 Renewable Energy/CWE 4 Credits, Summer Cooperative work experience.

Major emphasis on work-based learning experience in the renewable energy field. Coordination of instruction and evaluation of student job performance will be provided by college faculty in conjunction with the student's employer/supervisor. Variable Credit: 1-12 credits. Required: Student Petition. Corequisites: CWE-281

RET-209 Renewable Energy I: Energy Efficiency 3 Credits

This course concentrates on the conservation of scarce energy resources in residential, commercial and industrial applications. The course will examine the common sources of energy loss in building systems and homes, industrial processes and transportation. Students will be introduced to residential energy audits and mitigation. Topics will also include regenerative transportation systems, LEED certification, test instruments, insulation values, heat exchangers and financial payback period. Includes hands-on lab exercises.

Recommended: RET-200.

RET-211 Renewable Energy II: System Fundamentals 3 Credits

This course in renewable systems will provide in-depth understanding of the technology, economics and policies relevant to each type of energy source. Analysis techniques to evaluate renewable energy applications from a systems design and selection perspective will be presented. Topics include physical operating principles, theoretical vs. actual system output, energy storage, efficiency and cost analysis. Includes hands-on lab exercises.

Prerequisites: RET-209.

RET-213 Renewable Energy III: Installation & Maintenance 3 Credits
The third in a series of technical courses, Renewable Energy III: Installation and Maintenance will provide an introduction to installation and maintenance of renewable energy systems for commercial and residential installations. Students will apply their knowledge of electro-mechanical systems to the application of these systems. Topics covered will include site survey, site preparation, building codes, measurement tools, preventative maintenance and worksite safety. Includes hands-on lab exercises.
Prerequisites: RET-211.

RET-215 Renewable Energy IV: Systems Design 3 Credits
This fourth course in the series will concentrate on systems design for renewable energy applications. Students will work together and apply concepts to evaluate, design and select one or more renewable energy systems for solar, wind or micro-hydro installations. Topics will include site surveys, structural elements, electrical generators, energy storage and electrical inversion. Prerequisites: RET-213.

RET-217 Renewable Energy Capstone Project 3 Credits
This final class in the Renewable Energy series will concentrate on a capstone project. Students will evaluate a proposal for an alternative energy solution and then design an installation to meet the needs of the proposal. Students will be expected to perform a site survey, quantify energy requirements, select appropriate technologies, calculate the payback period and finally fabricate an actual or conceptual energy solution where appropriate. Prerequisites: RET-215.

RET 289 Professional Practice Manual 3 Credits
Students may choose to complete either an internship (TEC 289) or cooperative work experience, under the TEC Professional Practice Program. Internship – The internship is designed to be an enriching educational experience for Technology Students

RET **290 Renewable Energy Capstone 6 Hours**
Project Presentation Videos; Sustainable & Renewable Energy Electives -

RAILROAD ENGINEERING TECHNOLOGY, AAS

This program is designed to prepare students to apply technical knowledge and skills to the operation of railroads and other aspects of the railway industry, including railroad and railyard service. This program includes in depth instruction in railway culture, General Code of Operation rules, operating skills, signal systems, conductor service, switching, safety, as well as railroad equipment and mechanical operation and railway telecommunications systems.
Students will also learn how to manage the train's operation in extreme conditions. They may also be required to complete field experiences where they apply what they've learned in the classroom to real-life situations.

Job Opportunities

Graduates of the Railroad Engineering Technology program will be prepared to successfully enter into the rail industry and be better prepared for promotional opportunities

1st Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 101	History of Railroading	3
RET 110	Careers in the Railroad	2
RET 120	Railroad Rules, Regulations, Standards & Practices	3
ENG 101	English Composition I	3
MAT 120	Finite Mathematics	3
	Total Semester Credit unit	14

2nd Semester (Freshman)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 220	Safety in the Railroad Workplace	3
RET 230	Reading and Interpreting Railroad Diagrams	2
RET 240	Railroad Pneumatics and Hydraulic Controls	4
RET 270	Practicum in Passenger Railroad Technology	1
CITA 101	Principles of Computers and Applications	3
ENG 102 or	English Composition II	3
ENG 202	Effective Writing: Technical Writing	3
	Total Semester Credit unit	16

3rdSemester (Sophomore)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 242	Railroad HVAC Systems	4
RET 250	Railroad Signaling & Switching	4
PSY 101	Introduction to Psychology	3
COM 231	Public Speaking	3
RET 270	Practicum in Passenger Railroad Technology	1
	Total Semester Credit unit	15

4th Semester (Sophomore)		
Course Code	**Course Title**	**Credit Unit/ Hours**
RET 254	Railroad Maintenance, Troubleshooting and Repair	4
RET 252	Railroad Communications	4
HIS 114	World Civilizations Since 1500	3
RET 271	Practicum in Passenger Railroad Technology	1
RET 290	Student Projects	3
	Total Semester Credit unit	15

ENG 101 - English Composition I 3Credts

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG 202 Effective Writing: Technical Writing 3 Credits

A key emphasis will be on the rhetorical principles of effective communication, including context analysis and defining clear, actionable purposes. Students will gain experience with a wide range of technical writing genres, including reports, descriptions, definitions, procedures, job application documents, emails, memos, and web applications. Students will also learn about the importance of document and graphic design, including how best to design communications to maximize their potential for success.

COM 231 - Public Speaking 3 Credits

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audio-visual support.

Pre-requisite(s): Successful completion of ENG 111 & ENG 112with a grade of "C" or better

RET 101 - History of Railroading 3 Credits

Covers the history and traditions of railroading and the industry's role in the Nigerian economic development.

RET 110 - Careers in the Railroad 2 Credits

Provides information about technical careers in railroading to assist students to choose suitable career paths. Requires field trips that will demonstrate the relationships among technical work groups in day to day railroad operations.

Prereq/Corequisite: RET 101

RET 120 - Railroad Rules, Regulations, Standards & Practices 3 Credits

Provides participants with an overall understanding of governmental rules, regulations, standards, and practices as they apply to a railroad operation. Study includes a review of Code of Federal Regulations, Part 49, Railroad Standards and Practices Manual (AREMA)

and various railroads' book of rules.
Prereq/Corequisite: RET 101

RET 220 - Safety in the Railroad Workplace 3 Credits
Covers the principles and policies governing railroad safe work practices. Upon successful completion of this course, the student should be able to describe safety policies, including the application of team processes, use and care of personal protective equipment, lockout/tag out procedures, and hearing conservations.
Prerequisite: Successful completion of RET 120 with a grade of "C" or better.

RET 230 - Reading and Interpreting Railroad Diagrams 2 Credits
Provides participants with an overall understanding of how to read and interpret railroad electrical diagrams. Course topics will include a review and discussion of the following: ladder diagrams, contractors, motor starters, motors, programmable logic controller, railroad electrical symbols.
Pre-requisite Successful completion of EET 110 with a grade of "C" or better

RET 240 - Railroad Pneumatics and Hydraulic Controls 4 Credits
Introduces participants to the basic components, controls and functions of railroad pneumatics and hydraulics. Course topics include standard symbols, pumps, control valves, control assemblies, actuators, maintenance procedures and switching and control devices.
Prereq/Corequisite(s): MEC 234

RET 242 - Railroad HVAC Systems 4 credits
Provides participants with an overview of HVAC systems used on railcars. Basic hand and specialty tools and equipment will be covered as well as basic laws of heat transfer, thermo-dynamics and heat load. The study of the basic refrigeration cycle and its components will be introduced. In addition, students can qualify to obtain certification on the proper handling of refrigerants to include their effects on the environment. Lecture Hours: 3 Lab Hours: 2
Prerequisite(s): . Successful completion of MEC 234 with a grade of "C" or better

RET 244 - Railroad Electro-mechanical Troubleshooting 4 credits
Introduces participants to the tools, methods and techniques for troubleshooting electro-mechanical problems in machines and rolling stock equipment (trains).
Prerequisite: . Successful completion of MEC 234 with a grade of "C" or better

RET 250 - Railroad Signaling & Switching 4 credits
Provides participants a basic understanding of a railroad signal system, including track circuits and applicable federal laws/guidelines.
Prerequisites. Successful completion of EET110 and RET 120with a grade of "C" or better

RET 252 - Railroad Communications 4 credits
Introduces participants to a basic understanding of railroad communications. Course topics include frequency and pulse modulation, AM and FM transmitters and receivers, electromagnetic radiation, digital data communication, and applicable laws and regulations. **Prerequisite:** . Successful completion of RET 250 with a grade of "C" or better

RET 254 - Railroad Maintenance, Troubleshooting and Repair 4 credits
Introduces students to the tools, methods and techniques for troubleshooting signal and communication problems in switch machines and communication equipment. **Prerequisite:** Successful completion of MEC 234 with a grade of "C" or better

RET 270 - Practicum in Passenger Railroad Technology 1 credits
Provides students with experience in electric traction motors, catenary wire systems, signaling and track repair using APTA (American Public Transportation Association) standards. Students will complete at least 50 hours of supervised practicum. **Prerequisite:** Successful completion of MEC 220 with a grade of "C" or better

RET 271 - Practicum in Passenger Railroad Technology 1 credits
Provides students with experience in diesel-electric engines, freight railroading logistics and intermodal services, signaling upgrades and track renewal using laser-guided tamping equipment all in accordance with Northeast Operating Rules Advisory Committee (NORAC) standards. Students will also regularly inspect and help with ongoing maintenance of the rail line.
Prerequisite: Successful completion of MEC 220 with a grade of "C" or better

INSTITUTE OF THECHNICAL AND VOCATIONAL STUDIES (Certificates)

HEAVY TRUCK, DIESEL, AND INDUSTRIAL TECHNOLOGY - CERTIFICATE LEVEL 1

The Heavy Vehicle & Truck Repair program provides skilled and knowledgeable entry-level employees to heavy equipment industries all over the world. Employers actively seek HCC Heavy Vehicle & Truck Repair graduates to work as engine or maintenance specialists and field technicians.

1st Semester (Freshman)		
Course Code	Course Title	Credit Units/Hours
DTR 130	Shop Safety & Procedures	3
DTR 137	Basic Brake Systems	3
DTR 130	Diesel Engine Testing & Repair I	3
DTR 231	Diesel Engine Testing & Repair II	3
	Total Semester Credit Hours	12

2nd Semester (Freshman)		
Course Code	Course Title	Credit Units/Hours
DTR 135	Basic Electrical Systems	3
DTR 233	Electronic Controls	3
DTR 243	Advanced Electrical Systems	4
DTR 132	Heating, Ventilation, & Air Conditioning (HVAC) Troubleshooting & Repair	3
	Total Semester Credit Hours	13

3rd Semester (Sophomore)		
Course Code	Course Title	Credit Units/Hours
DTR 139	Preventative Maintenance	3
DTR 136	Basic Hydraulics	3
DTR 133	Steering & Suspension I	3
DTR 134	Power Train Applications I	3
DTR 138	Cooperative Education - Diesel Mechanics Technology/Technician (Capstone)	3
	Total Semester Credit Hours	15

Total Credits 40

DTR 130 Shop Safety and Procedures 3 Credits
A study of shop safety, rules, basic shop tools, and test equipment.

|DTR 137Basic Brake Systems 3 Credits
Basic principles of brake systems of diesel powered equipment. Emphasis on maintenance, repairs, and troubleshooting.

DTR 131Diesel Engine Testing and Repair I 3 Credits
An introduction to testing and repairing diesel engines including related systems specialized tools.

DTR 231Diesel Engine Testing and Repair II 3 Credits
Coverage of testing and repairing diesel engines including related systems specialized tools.

DTR 135Basic Electrical Systems 3 Credits
Basic principles of electrical systems of diesel powered equipment with emphasis on starters, alternators, and batteries.

DTR 233Electronic Controls 3 Credits
Advanced skills in diagnostic and programming techniques of electronic control systems.

DTR 243Advanced Electrical Systems 4 Credits
A continuation of basic electrical systems to include lighting, computer controls and accessories. Emphasis on diagnosis, testing, and repair using the various diagnostic tools and procedures for current electronic systems.

DTR 132Heating,Ventilation , and Air Conditioning (HVAC) Troubleshooting and Repair 3 Credits
Introduction to heating, ventilation, and air conditioning theory, testing, and repair. Emphasis on refrigerant reclamation, safety procedures, specialized tools, and repairs

DTR 139 Preventative Maintenance 3 Credits
An introductory course designed to provide the student with basic knowledge of proper servicing practices. Content includes record keeping and condition of major systems.

DTR 136Basic Hydraulics 3 Credits
Fundamentals of hydraulics including components and related systems.

DTR 133Steering and Suspension I 3 Credits
A study of design, function, maintenance, and repair of steering and suspension systems. Emphasis on troubleshooting and repair of failed components.

DTR 134Power Train Applications I 3 Credits
In-depth coverage of the mechanics and theory of power trains. Emphasis on disassembly, inspection, and repair of power train components.

DTR 138Cooperative Education - Diesel Mechanics Technology/Technician 3 Credits
Career-related activities encountered in the students area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

CREATIVE WRITING: SCREENWRITING CERTIFICATE

The Certificate in Creative Writing offers both basic and advanced workshops and appeals to students new to creative writing as well as students with writing experience who want to learn new skills. Through a series of courses in fiction, poetry, creative nonfiction, and screenwriting, the Certificate in Creative Writing focuses on creative writing as a form of critical thinking as a way to reimagine audience and as a space of innovation. These creative writing courses are designed as hands-on, intensive study of the subtleties and power of language.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 101	English Composition I	3
ENG 102	Approaches to Literature	3
ENG 135	Short Narrative Film Writing	1
ENG 200	Screenwriting	3
ENG 274	Marketing the Screenplay	2
COM 225	Communication Law/Ethics	3
	Total Semester Credit Units	15

.2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENG 216	Advanced Screenwriting	3
ENG 233	Film Analysis	3
ENG 201	Fundamentals of Speech	3
ENG 255	Argument Writing	3
PSY 101	Introduction to Psychology	3
	Total Semester Credit Units	15

Minimum Credits for Graduation: 30 credits

ENG 227 - Fundamentals of Creative Writing 3 Credits

In this Creative Writing Course, students write in the four genres: fiction, poetry, creative nonfiction and drama. Students learn to read to study the craft of writing, practice the art of imitation, and develop a sustainable writing practice. Students also learn the art of effective participation in writers' workshops and in literary citizenship.

Pre-requisites: Successful completion of ENG 101 with a grade of "C" or better.

ENG 101 - English Composition I 3 Credits

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

ENG103 - Approaches to Literature 3 Credits

Provides a comprehensive introduction to the major aspects of literature. Extensive writing, using various rhetorical modes, helps students appreciate and understand fiction, drama, and poetry as forms of literary expression.

Pre-requisite: Successful completion of ENG 101 with a grade of C or better

ENG200 – Screenwriting 3 Credits

This course introduces students to the fundamentals of developing and writing screenplays for film and television. Story analysis, creative concept development, the writing process, and script format are emphasized. Other topics include networking, marketing, and screenwriting resources.

Pre-requisite: Successful completion of ENG 101 with a grade of C or better.

ENG 274 - Marketing the Screenplay 1 Credit

Examines approaches screenwriters use to get their creative work read by the film industry. Major topics include networking, querying, and pitching. Students develop an understanding of how agencies, management companies, production companies, studios, entertainment attorneys, and writer unions interact. Writers' groups, conferences, film festivals, fellowships and competitions, and other resources are discussed. Legal concerns including copyright and wga registration, release forms, and option contracts are explored. Treatments, loglines, query letters, cover letters, and other tools are developed.

Pre-requisite: Successful completion of ENG 102 with a grade of "C" or better.

ENG135 - Short Narrative Film Writing 1 Credit

This course explores creative techniques used to write screenplays for short films. Topics covered include story concept, structure, theme, setting, character, and dialogue. Visual writing is emphasized. Alternative structures for new media stories are discussed. Students complete an original screenplay for a short film (30 minutes).

Pre-requisite: Successful completion of ENG 101 with a grade of C or better.

ENG 233 – Film Analysis **3 Credits**

In this course, students will become familiar with the history of film and acquire a language to discuss, analyze and write about film. This course covers a wide range in cinema and students explore issues including but not limited to: pre-cinema, early cinema, silent films, early sound, American auteurs, International films, and digital cinema. In this course, students will become literate in film analysis, paying particular attention to mise-en-scene, elements of cinematography, narrative structure, editing, montage, and sound.

ENG255 Argument Writing **3 Credits**

The course entails intensive study of and practice in writing in a variety of argument templates, using the principal rhetorical forms, with an eye toward developing effective techniques of proofreading and editing. Intensive grammar and style instruction enable students to offer global and sentence-level responses to the writing of peers.

Pre-requisite: Successful completion of ENG 101 with a grade of C or better

ENG 204 – Interpersonal Communication **3 Credits**

This course is an introduction to the basic principles of interpersonal communication. Theoretical perspectives are presented and integrated with practical applications. The focus is on developing awareness and knowledge that contributes to effective interpersonal communication. Topic areas include relational development, self-awareness, interpersonal perception, listening, social roles, and conflict management. Emphasis is placed on class participation and application of content.

Pre-requisites: Successful completion of ENG 101 with a grade of C or better

PSY 101 Introduction to Psychology **3 Credits**

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

COM 225 – Communication Law/Ethics **3 Credits**

The course introduces students to communication law, with an emphasis on First Amendment issues, libel, privacy, confidentiality, access to information, etc. The ethics section is designed to help students to think critically, solve problems, and understand the consequences of what they will be doing in the “working world.

PROFESSIONAL COOKERY, BACCALAUREATE CERTIFICATE

Certificate in Professional Cookery is designed to provide foundational techniques to be applied in professional cooking environments. Students will be able to apply fundamental cooking theories and critical skills to develop and evaluate a variety of menu types including nutritional and international concepts.

Students who successfully complete Professional Cookery certificate may choose to apply these credits toward an A.A.S. degrees in Culinary Arts or Baking and Pastry.

-
- Requires a minimum grade of "C" or better in all coursework
-

Professional Cookery Certificate

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
CUL 110	Sanitation	2
CUL 111	Foundations of Professional Cooking I	5
CUL 115	Nutrition	2
CUL 120	Nutritional Cooking	3
CUL 121	Foundations of Professional Cooking II	5
CUL 125	Professional Growth and Development II	1
CUL 127	International Cuisine	5
	Total Semester Credit Units	23

CUL 110 - Sanitation & Safety 2 Credits

This course introduces the basic principles of sanitation and safety relative to the hospitality industry. Topics include personal hygiene, sanitation and safety regulations, use and care of equipment, the principles of food-borne illness, and other related topics. Upon completion, students should be able to demonstrate an understanding of the content necessary for successful completion of a nationally recognized food/safety/sanitation exam.

CUL 111 Foundations of Professional Cooking I 5Credits

This course is a foundational course designed to launch culinary careers by introducing and immersing students into the world of the commercial kitchen. Topics include: standards of professionalism, knife skills, culinary terminology, and basic food science principles. Classical techniques in sandwich making, clear and cream soups, purees and also international specialty soups will be taught. *All culinary and baking/pastry lab courses require a C or better for a passing grade.

CUL115 Nutrition 2 Credits

Provides information about nutrition as it applies to the food service industry. The six classes of nutrients are discussed as well as the latest guidelines set forth by governmental agencies and health organizations. Students learn about healthful cooking methods needed to modify and create menus for specific health concerns. The role of diet in disease prevention also is discussed.

CUL 121 Foundations of Professional Cooking II 5Credits

Learn about and prepare classical mother sauces, contemporary sauces, small sauces, vegetables, grains, starches, pasta, and eggs. Use food science principles related to primary cooking techniques, show station organization, workflow and overall time management. Practice proper use of commercial equipment and reinforcement of understanding of ingredients, measurement, formulas, and techniques.

CUL 120 Nutritional Cooking 3Credits

Nutritional Cooking introduces basic nutrition concepts and applies them directly into the culinary teaching kitchens. The course is collaboration between a chef and registered dietitian that combines culinary perspective with current nutritional concepts and food industry trends. Topics include evaluating credible nutrition information, food allergies, chronic disease prevention and meal planning, digestion with discussion of common disorders, labeling and its importance for the restaurant industry, recipe nutrient analysis, and plant-based or vegetarian/vegan meal planning. All culinary and baking/pastry lab courses require a C or better for a passing grade.

CUL 127 International Cuisine. 5 Credits

This course provides a global perspective of culinary cultures and cuisines with a focus on ingredients. Through lectures and the preparation of traditional dishes, students will explore how culture and geography influence the foods of the world.

Pre-requisite: Successful completion of CUL 121 with a grade of "C" or better.

CUL 125 Professional Growth and Development II 1 Credit

The course is designed to achieve two aspects of the industry, professional growth and development. Students will take a practical assessment on skills obtained in their second foundational courses and receive feedback to the professional growth of the program compared to industry benchmarks. In the second part to this course, students are given advise to career bridge and preparation to their internship course.

Pre-requisite: Successful completion of CUL 121with a grade of "C" or better.

BAKING AND PASTRY, BACCALAUREATE CERTIFICATE

The Baking and Pastry certificate focuses on professional cake decorating to advance the skills needed in the creation and sell of professional cakes while attaining degree credit. The courses are designed to be offered at different modalities (evening and weekend options) to currently enrolled baking and pastry students and new students.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
BPA 142	Foundations of Cakes	3
BPA 145	Small Business Entrepreneurship	2
BPA 150	Advanced Wedding Cakes and Sugar Artistry	3
BPA 151	Dessert Cakes	5
BPA 155	Social Media	2
BPA 175	Event and Catering Cakes	3
BPA 176	Sculpted Cakes	3
	Total Semester Credit Units	21

BPA 142 Foundations of Cakes 3Credits

This course introduces students to a variety of cakes, including celebration cakes utilizing mixing methods for all types of cakes as the building blocks of this course. Students also learn decorative piping, inscriptions, border work, color design, floral arrangement and royal icing ornamentation to create contemporary celebration cakes. *All culinary and baking/pastry lab courses require a C or better for a passing grade

BPA 145 Small Business Entrepreneurship 2Credits

This course provides students with a survey of those issues entrepreneurs typically face in starting, managing, and growing a small business. Students will survey legal, financial, operational, resource management and marketing issues, among other things. This course also addresses general national and local trends with Start Up businesses and established small businesses ventures.

BPA 150 Advanced Wedding Cakes and Sugar Artistry 3Credits

This course stresses advanced cake decorating and sugar artistry. Students learn highly skilled cake decorating techniques of fondant, icings, and gum paste, they bring their art to life-creating a sophisticated wedding cake for custom design. The second half of the course explores the use of sugar as a decorative medium. Methods for casting, pulling, blowing, and molding sugar are taught and practiced. These techniques are brought together into a final colorful and imaginative showpiece to demonstrate their applied proficiency. *All culinary and baking/pastry lab courses require a C or better for a passing grade.

BPA 151 Dessert Cakes **5Credits**

Classic tortes, as well as, innovative, lighter entremets ca are taught in this workshop-style course – which emphasizes cakes as delicious desserts and as distinctive eye-catching finales. Students will learn foundational elements including mousses, fruits, sponge cakes, meringues, and chocolate components that will be the building blocks for creating their own unique desserts. All culinary and baking/pastry lab

BPA 155 Social Media **2Credits**

The landscape of marketing has been changing for both large and small brands. Influencer marketing has taken huge strides and is here to stay and grow. Students will define and learn how to manage their own brand on social media platforms. Students will explore styles, strategy, and the tools to create great images and content to develop their own social media voice.

BPA 175 Event and Catering Cakes **3 Credits**

Cake showpieces for special events, which build client recognition and brand awareness, are the focus of this cours Students learn to make large-scale celebration cakes - from developing a design, highlighting the client's brand and significant event - all the way through delivery. The final project is a custom-designed cake for a client of the student's choosing. All culinary and baking/pastry lab courses require a C or better for a passing grade.

Pre-requisite: Successful completion of BPA 100 with a grade of "C" or better..

BPA 176 Sculpted Cakes **3Credits**

Students will learn the art of creating 3-D cakes which are the showpieces of any occasion. The techniques of cake carving, sculpting, and stacking will be covered. In addition, students will learn advanced fondant decorating techniques, as well as, how to work with a variety of mediums including gum paste, modeling chocolate, and airbrushing to create realistic details. Students will learn how to successfully construct a cake that exceeds a client's expectations not only in design, but flavor. All culinary and baking/pastry lab courses require a C or better for a passing grade

. **Pre-requisite**: Successful completion of BPA 100with a grade of "C" or better.

RESTAURANT MANAGEMENT, CERTIFICATE

The NAAC Career Studies Certificate in Restaurant Management prepares students for entry-level management positions in foodservice operations such as restaurants, catering companies, hotels, and resorts. Instruction consists of menu planning, staff management and supervision, food purchasing, and food and beverage service management.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
HRI 109	Introduction to Restaurant Management	2
HRI 134	Food and Beverage Service Management	3
HRI 158	Sanitation and Safety	3
HRI 215	Food Purchasing	3
HRI 241	Supervision in the Hospitality Industry	3
	Total Semester Credit Units	14

2nd Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
HRI 224	Recipe and Menu Management	3
HRI 245	Labor Cost Control	3
HRI 259	Beverage Management	3
HRI 290	Coordinated Internship in Restaurant Management	5
	Total Semester Credit Units	14

Program Total Minimum Credits: 28

HRI 109 - Introduction to Restaurant Management 2 Credits

Introduces the history, opportunities, problems and trends of restaurant management. Covers the organization and responsibilities of managing a restaurant including human resources, general business considerations, and management theory.

HRI 134 - Food and Beverage Service Management 3 Credits

Provides a conceptual and technical framework for managing the service of meals in a variety of commercial settings. Studies the integration of production and service delivery, guest contact dynamics, reservations management and point-of-sale systems.

Pre-requisite: Successful completion of HRI 158 with a grade of "C" or better.

HRI 158 - Sanitation and Safety 3 Credits

Covers the moral and legal responsibilities of management to insure a sanitary and safe environment in a food service operation. Emphasizes the causes and prevention of food borne illnesses in conformity with federal, state and local guidelines. Focuses on OSHA standards in assuring safe working conditions.

HRI 215 - Food Purchasing **3 Credits**

Presents the method and procedures for purchasing food for hotels, restaurants and institutions. Deals with markets, federal and trade grades, governmental regulations, packaging, comparative versions price buying, yields and quality control.

HRI 241 - Supervision in the Hospitality Industry **3 Credits**

Provides a comprehensive review of considerations for preparing students to become effective supervisors in restaurants and lodging operations.

Pre-requisite: Successful completion of HRI 154 with a grade of "C" or better. **Corequisite:** HRI 109

HRI 224 - Recipe and Menu Management **3 Credits**

Presents a comprehensive framework for creating and evaluating recipes and menus for commercial and non-commercial food service operations. Requires students to use microcomputer software to design recipes, recipe files, and menus. Teaches students menu engineering analysis and methods for optimizing menu contribution margin.

HRI 245 - Labor Cost Control **3 Credits**

Focuses on position analysis and description. Considers employee scheduling, forecasting, and staffing needs as related to sales for the labor-intensive hospitality industry. Covers interpretation and analysis of payroll to maximize efficiency and productivity. Uses problem solving techniques to illustrate payroll procedures. Includes explanation of payroll deductions, tip credits and tip-sales allocation.

HRI 259 - Beverage Management **3 Credits**

Involves the systematic study of beverages, emphasizing the use of beverages as a complement to food. Topics include both alcoholic and non-alcoholic beverages, beverage equipment and bar setup in addition to mixology, beer, wine and spirits.

HRI 290 - Coordinated Internship in Restaurant Management **5 Credits**

Supervises on-the-job training in selected business, industrial or service firms coordinated by the college. Credit/practice ratio not to exceed 1:5 hours. May be repeated for credit. Variable hours.

WEB DEVELOPER, CERTIFICATE OF SPECIALIZATION

This Certificate of Specialization is designed for students seeking skills to qualify for positions as Web Developers. The certificate was developed to include topics that will build the programming and database skills a Web Developer needs in order to build and maintain a corporation's website. Emphasis is placed upon object-oriented languages that are prevalently used for the Internet and intranets. The courses provide students with both the theoretical and technical knowledge and practical hands-on experience to be successful in the high demand Web Developer occupation

At the completion of the program, students are expected to:

1. design and develop websites for various display devices.
2. design and develop websites that incorporate current primary and secondary navigation features.
3. design and develop websites that comply with industry standards and guidelines for content accessibility.
4. use current software to design front-end (Browser-side) applications for data collection and retrieval over the Web.
5. maintain, modify, and implement upgrades to existing websites.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 187 or	Java Programming I	4
C1S 53	C# Programming I	4
CIS 139	Web Publishing	3
CIS 142	Web Development I	3
	Total Semester Credit Units	14

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 141	Graphics for the Web	3
CIS 265	Web Scripting Technologies	3
CIS 287 or	Java Programming II	4
CIS 253	C# Programming II	4
	Total Semester Credit Units	

CIS 139. Web Publishing. 3 Credits

Web Publishing introduces current industry standards for web development and design techniques that include the use of Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and an introduction to JavaScript. Topics such as web development process,

accessibility standards, platform standards, HTML editors and converters, Web 2.0 Technologies, performance issues, tables, forms, dynamic content, and web site management issues will be presented.
Pre-requisite: Reading Proficiency.

CIS 153. C# Programming I. 4 Credits
This course emphasizes software development problem-solving methodologies utilizing current software design and development tools and techniques. Topics include data structures, program design, pseudocode, language control structures, procedures and functions, error handling and Object Oriented design using classes. Assignments will be developed in the C# language using the current development environment.
Pre-requisite: Reading Proficiency.

CIS 187. Java Programming I. 4 Credits
In this course students learn software development problem-solving methodologies utilizing current software design and development tools and techniques and also receive an introduction to the Java programming language. Topics include data structures, program design, pseudocode, language control structures, procedures and functions, error handling and Object Oriented design using classes. Assignments are developed in Java using a current integrated development environment (IDE). Basic computer literacy expected.
Pre-requisite: Reading Proficiency.

CIS 265. Web Scripting Technologies. 3 Credits
This course presents current and emerging scripting technologies used for development of state-of-the-art websites and other applications. The primary focus is on client-side technologies. Students will use a variety of technologies in this project-oriented class.
Pre-requisite: Successful completion of CIS 139 with a grade of "C" or better.

CIS 142. Web Development I. 3 Credits
Web Development I is an in-depth study of the development and implementation of engaging websites using current industry production tools. Accessibility, security, and website management issues will be addressed. Topics such as file formats, platform standards, user-centered navigation, dynamic content such as streaming video/audio, and search engine concepts will be presented.
Pre-requisites: Successful completion of CIS 187 or CIS 153, CIS 139, CIS 265 with a grade of "C" or better..

CIS 141. Graphics for the Web. 3 Credits.
Graphics for the Web focuses on generating graphics that can be utilized within the context of the Internet. Topics will include use of graphics at the appropriate times, performance issues, button creation, animated graphics, and multimedia tools.
Pre-requisite: Successful completion of CIS 139 with a grade of "C" or better.

CIS 253. C# Programming II. **4 Credits**

C# Programming II focuses on broadening and deepening the student's understanding of Object Oriented Programming (OOP) as implemented in the C# language. Core elements include creating and deploying Windows programs, form application basics, building user interfaces using basic techniques, .NET fundamentals, basic coding within the .NET framework, design and development of classes, overloading and overriding methods and constructors, inheritance, encapsulation, and interfaces. Course objectives align with the Microsoft Certified Technical Specialist (MCTS) .NET Framework, Windows Applications certification.
Pre-requisites: Successful completion of CIS 153 or CIS 167 or CIS 187 with minimum grades of "C" and Reading Proficiency.

CIS 287. Java Programming II. **4 Credits**

Java Programming II focuses on broadening and deepening the student's understanding of Object Oriented Programming (OOP) as implemented in the Java language. Core elements include design and development of classes, overloading and overriding methods and constructors, inheritance, encapsulation, and interfaces. Course objectives align with Oracle's Certified Professional, Java SE Programmer certification.
Pre-requisites: Successful completion of CIS 153 or CIS 167 or CIS 187 or CIS 256 with minimum grades of "C"

COMPUTER AIDED DESIGN (CAD), CERTIFICATE OF SPECIALIZATION

The Computer Aided Design (CAD) Certificate of Specialization prepares a CAD operator to interpret data from multiple sources, apply traditional drafting skills, utilize operating system software, and follow industrial practices and company procedures related to CAD work.
Graduates will be able to efficiently perform all tasks related to producing final drawings and CAD models.

1. Create two-dimensional (2D) CAD drawings.
2. Create three-dimensional (3D) CAD models.
3. Produce drawings that comply with industry standards.
4. Incorporate and extract design properties in CAD files.
5. Manage CAD files. interpret mechanical and electrical drawings

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 187 or	Java Programming I	4
C1S 53	C# Programming I	4
CIS 139	Web Publishing	3
CIS 142	Web Development I	3
	Total Semester Credit Units	14

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 141	Graphics for the Web	3
CIS 265	Web Scripting Technologies	3
CIS 287 or	Java Programming II	4
CIS 253	C# Programming II	4
	Total Semester Credit Units	

Total Semester Credit Units10

EGR 100. Engineering Drawing. 3 Credits

Engineering Drawing uses a combination of instruments and CAD systems for making drawings. The course includes use of instruments, lettering, geometrical constructions, technical sketching, principles of orthographic projection, pictorial drawing, descriptive geometry, sectional views and conventions, auxiliary views, and dimensioning.

EGR 133. Introduction to AutoCAD I. 2 Credits.

Introduction to AutoCAD I covers the fundamentals of the AutoCAD drafting system. Students will learn how to create drawings, setup units, limits, layers, line types, and colors. Drawing procedures for typical geometric operations are covered. Special features operations including polylines, blocks, dimensioning, cross-hatching, and plotting are also covered.

GE 135. Blueprint Reading for Engineering Technicians. 2 Credits

Blueprint Reading for Engineering Technicians covers mechanical drawings, electrical drawings, and electrical schematics and introduces Geometric Dimensioning and Tolerancing (GD&T). Topics include reading specifications from the drawing, understanding basic symbols, and interpreting the drawings for producing parts.

GE 101. Technical Computer Applications. 3 Credits

Technical Computer Applications is an introduction to the use of personal computers in technology. Topics of this course include PC hardware, operating systems, word processing, spreadsheets, engineering graphics, and the Internet.

ME 230. Introduction to 3-D Solid Modeling for Design. 4 Credits

Introduction to 3-D Solid Modeling for Design teaches the use of 3D solid modeling CAD packages. Instruction includes how to use a 3D CAD package to develop solid models in order to generate assemblies and 2D drawings. This course focuses on Solid works or Inventor.
Pre-requisites: Successful completion ofEGR 100 with a grade of "C" or better**.**

EGR 230. Introduction to Revit. 4 Credits

Introduction to Revit will provide instruction using Revit software for building information modeling (BIM) for architecture. Instruction will focus on how both graphic and non-graphic architectural information for a building is produced through the creation of a single project database represented in a 3D model.

EGR 141. Introduction to AutoCAD II. 2 Credits

Continuation of Introduction to AutoCAD 1. DOS for AutoCAD, Blocks, attributes, symbol libraries, bill of material extraction, screen and tablet menus, digitizing drawings, slides and slide shows, introduction to LISP language.

Pre-requisites: Successful completion of EGR 133 with a grade of "C" or better

CYBERSECURITY, CERTIFICATE OF PROFICIENCY

This program provides the foundation courses to prepare IT students to apply for entry level information assurance/security technician/practitioners positions that support planning, implementing, upgrading, and monitoring security measures for the protection of computer networks and information systems. Students, through in-depth theory and extensive hands-on activities, will develop skills to ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure, and will develop skills to respond to computer security breaches and viruses. Includes instruction in computer architecture, programming, and systems analysis; networking; cryptography; security system design; applicable law and regulations; risk assessment and policy analysis; contingency planning; user access issues; investigation techniques; and troubleshooting.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 153 or CIS 187	C# Programming I or Java Programming I	4
MAT 140	Intermediate Algebra	3
CIS 139	Web Publishing	3
CIS 229	Unix/Linux I	3
ITN 100	Introduction to Cybersecurity	1
	Total Semester Credit Units	14

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 237	Fundamentals of Information Assurance/Security - CompTIA Security+	3
CIS 265	Web Scripting Technologies	3
CIS 264 or	Unix/Linux II	3
ITN 121	Secure E-Commerce	3
ITN 101	Cisco Networking Academy I: Introduction to Networks	5
ITN 120	Enterprise Security Management	3
	Total Semester Credit Units	17

3rd Semester		
Course Code	Course Title	Credit Unit/ Hours
CIS 225	Database Management	4
ITN 212	Ethical Hacking	3
ITN 214	Systems Security Engineering	3
CIS 112	Software and Hardware Architecture	3
ITN 216	Digital Forensics	3
	Total Semester Credit Units	16

MAT 140. Intermediate Algebra. 3 Credits.
Intermediate Algebra provides the transition from the Math Literacy Course into the Precalculus Algebra course. Operations on rational expressions, operations on radicals, solving quadratic equations, and the rectangular coordinate system are among the topics covered.

CIS 112. Software and Hardware Architecture. 3 Credits.
Software and Hardware Architecture provides a survey of technical topics related to computer systems with emphasis on the relationships between hardware architecture and systems software. Binary and hexadecimal number systems, data representation, data structures, processor architecture, and operating systems functions, and methods will be explored. Recommended Preparation: Basic computer literacy is expected.

ITN 100. Introduction to Cybersecurity. 1 Credit
Introduction to Cybersecurity introduces the people, products, and processes that protect electronic data from those with malicious intent. This course will introduce students to various experts who discuss the concepts of cybersecurity including what it is, why it is important, and some of the products and processes that they use to secure data. Connections between the required courses in the Cybersecurity Program will be explored. The opportunities within this growing field will be covered. This course is not intended to teach students to implement security products and processes, but rather to make students aware of the global need for cybersecurity and the advancement in this industry. Cybersecurity requires a basic understanding of networking concepts. Supplemental information and activities for specific networking concepts are included where needed throughout the course.

ITN 212. Ethical Hacking. 3 Credits.
This course examines the background, history, and theory of ethical hacking. Hands-on activities using practical applications and real-life simulations to practice hacking techniques and methodologies will be used to find and attempt to exploit vulnerabilities of an organization's network infrastructure. Best countermeasures will be determined to improve security policies to protect information resources in an effort to minimize or eliminate any potential attacks. Communication skills and techniques for the cybersecurity workplace are emphasized throughout the course.
Pre-requisite: Successful completion of `CIS 237 with a grade of "C" or better.

CIS 139. Web Publishing. 3 Credits.
Web Publishing introduces current industry standards for web development and design techniques that include the use of Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and an introduction to JavaScript. Topics such as web development process, accessibility standards, platform standards, HTML editors and converters, Web 2.0 Technologies, performance issues, tables, forms, dynamic content, and web site management issues will be presented.

CIS 153. C# Programming I. 4 Credits.
This course emphasizes software development problem-solving methodologies utilizing current software design and development tools and techniques. Topics include data structures, program design, pseudocode, language control structures, procedures and functions, error handling and Object Oriented design using classes. Assignments will be developed in the C# language using the current development environment.

CIS 187. Java Programming I. 4 Credits.
In this course students learn software development problem-solving methodologies utilizing current software design and development tools and techniques and also receive an introduction to the Java programming language. Topics include data structures, program design, pseudocode, language control structures, procedures and functions, error handling and Object Oriented design using classes. Assignments are developed in Java using a current integrated development environment (IDE). Basic computer literacy expected.

CIS 225. Database Management. 4 Credits.
This course will cover the concepts, skills, methodology, and database technology necessary to design and implement a relational database management system. Topics include relational databases, data structures, relational data modeling and design using current industry techniques and tools. This course emphasizes Structures Query Language (SQL) commands to create a relational database.

CIS 229. Unix/Linux I. 3 Credits.
This course introduces the Unix/Linux operating system with special focus on the organization and maintenance of the file system. Students are also introduced to basic installation and configuration of the operating system and will build and troubleshoot a stand-alone Unix/Linux machine. Course objectives align with the Linux Professional Institute Level 1 certification and emphasize command line process. Basic computer literacy is expected.

CIS 237. Fundamentals of Information Assurance/Security - CompTIA Security+. 3 Credits.
Fundamentals of Information Assurance/Security - CompTIA Security+ examines fundamentals of network security involved in creating and managing secure computer network environments. Both hardware and software topics are considered, including

authentication methods, remote access, network security architectures and devices, cryptography, forensics, and disaster recovery plans. This course serves as a preparation basis for the CompTIA Security+ exam.
Pre-requisite: Successful completion of CIS 229 with a grade of "C" or better.

CIS 265. Web Scripting Technologies. 3 Credits
This course presents current and emerging scripting technologies used for development of state-of-the-art websites and other applications. The primary focus is on client-side technologies. Students will use a variety of technologies in this project-oriented class.
Pre-requisite: Successful completion of CIS 139 with a grade of "C" or better.

ITN 101. Cisco Networking Academy I: Introduction to Networks. 5 Credits.
This course focuses on learning the fundamentals of networking. Practical and conceptual skills that build the foundation for understanding basic networking will be covered. This is the first of four (4) courses as preparation for the Cisco Certified Network Associate (CCNA) certification as well as the first of two (2) courses as preparation for the Cisco Certified Entry Networking Technician (CCENT).

ITN 120. Enterprise Security Management. 3 Credits
This course examines managerial aspects of computer security and assurance for enterprises. Topics include risk management, contingency planning, access control models, and information security governance including FISMA compliance, program assessment and metrics. The student will acquire knowledge of accreditation, certification, procurement and operating principles for
secure computing systems.
Pre-requisite: Successful completion of CIS 237 with a grade of "C" or better.

ITN121. Secure E-Commerce. 3 Credits
Secure E-Commerce examines the principles and techniques for secure electronic commerce. Topics include cryptography, certification authorities, public key infrastructure, biometrics, digital signatures, and legal and national policy issues surrounding e-commerce.
Pre-requisites: Successful completion of CIS 229 and CIS 237, both with a minimum grade of "C" and Reading Proficiency.

CIS 264. Unix/Linux II. 3 Credits
This course prepares students to perform basic Unix/Linux systems administration and network installation tasks. Students will be introduced to the design, configuration, and installation of system services along with management and automation of those services through shell scripting. System security will also be covered. Course objectives align with the Linux Professional
Institute Level 1 certification.
Pre-requisite: Successful completion of CIS 229 with a grade of "C" or better.

ITN 212. Ethical Hacking. 3 Credits

This course examines the background, history, and theory of ethical hacking. Hands-on activities using practical applications and real-life simulations to practice hacking techniques and methodologies will be used to find and attempt to exploit vulnerabilities of an organization's network infrastructure. Best countermeasures will be determined to improve security policies to protect information resources in an effort to minimize or eliminate any potential attacks. Communication skills and techniques for the cybersecurity workplace are emphasized throughout the course. This course serves as preparation for the EC-Council Ethical Hacking certification exam.

Pre-requisite: Successful completion of CIS 237 with a grade of "C" or better..

ITN 214. Systems Security Engineering. 3 Credits

This course prepares the student to identify, evaluate, and prioritize potential threats, and manage and mitigate threats through risk management concepts, assessment activities, and monitoring terminology, techniques, and systems. Students will gain skills to properly respond to a security incident or forensic investigation with incident handling processes and procedures such as Business Continuity Planning (BPC) and Disaster Recovery Planning (DRP).

Pre-requisite: Successful completion of CIS 237 with a grade of "C" or better.

ITN 216. Digital Forensics. 3 Credits

Digital crime scene investigation practices and digital evidence capture, documentation, validation and preservation techniques are taught through in-depth participatory exercises. Steganography, mobile data acquisition, network monitoring, decryption, manual and automated file and password recovery techniques are taught.

Pre-requisites: Successful completion of CIS 112, CIS 229, CIS 237 with a grade of "C" or better.

WELDING TECHNOLOGY DIPLOMA, CTE

Diploma in Welding Technology is a Mechanical Engineering course. The course involves carbon steel, stainless steel, aluminium etc. among the welding-type which are used are like Shielded metal arc welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), Submerge Arc Welding (SAW) etc. Through this course the students will learn few things regarding the quality assurance and control, inspection and testing, supervision, factory training etc. the students will be equipped with computer software application skill. The training comprises of planning skill, supervising the design, inspection and testing the welding task to fulfil the quality assurance and safety rules.

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1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
COM 110	Introduction to Communication	3
MAT 110	Math Measurement & Literacy	3
WLD 110	Cutting Processes	2
WLD 115	SMAW (Stick) Plate	5
	Total Semester Credit Hours	14

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
WLD 121	GMAW (MIG) FCAW/Plate	4
WLD 131	GTAW (TIG) Plate	4
WLD 141	Symbols & Specifications	3
BPR 111	Print Reading	2
	Total Semester Credit Hours	13

3rd Semester		
Course Code	Course Title	Credit Unit/ Hours
WLD 116	SMAW (stick) Plate/Pipe	4
WLD 132	GTAW (TIG) Plate/Pipe	3
WLD 143	Welding Metallurgy	2
WLD 262	Inspection & Testing	2
	Total Semester Credit Hours	12

Total Welding Technology Diploma: 39 Credits

COM 110 - Introduction to Communication 3 Credits

This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal group, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts.

MAT 110 - Math Measurement & Literacy **3 Credits**

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

WLD 110 - Cutting Processes **2 Credits**

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

WLD 115 - SMAW (Stick) Plate **5 Credits**

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

WLD 121 - GMAW (MIG) FCAW/Plate **4 Credits**

This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WLD 131 - GTAW (TIG) Plate **4 Credits**

This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 141 - Symbols & Specifications **3 Credits**

This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

BPR 111 - Print Reading **2 Credits**

This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

WLD 116 - SMAW (stick) Plate/Pipe **4 Credits**

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

Pre-requisite: Successful completion of WLD 115with a grade of "C" or better.

WLD 132 - GTAW (TIG) Plate/Pipe **3 Credits**

This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

Pre-requisite: Successful completion of WLD 131with a grade of "C" or better.

WLD 143 - Welding Metallurgy **2 Credits**

This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

WLD 262 - Inspection & Testing **3 Credits**

This course introduces destructive and non-destructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and non-destructive testing processes.

CABINETMAKING AND MILLWORK CERTIFICATE

The Cabinetmaking and Millwork program at Nubian College will empower you with a strong understanding of modern woodworking techniques and equip you for success as a cabinetmaker, finish carpenter, or one of many other jobs that make use of this knowledge. As a student in Cabinetmaking and Millwork, you will:

- Build knowledge and skills necessary to plan and complete cabinetry, furniture and millwork projects.
- Learn the fundamentals of working with wood -- from planning a project to adding the finishing details -- all in our well-equipped lab.
- Understand how to work with prints, specifications and shop drawings.
- Practice selecting proper materials, determining the best procedures, manufacturing parts to specification, and assembling and finishing individual projects.
- Learn to plan and process wood in the most efficient manner using traditional woodworking equipment and hand tools, as well as the latest computer numerically controlled (CNC) machinery and software.
- Gain practical experience in a variety of large-scale projects through partnerships with area businesses and local and state agencies.
- Work both individually and in teams to plan, estimate and execute woodworking projects.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CMM101	Surfaces 1	1
CMM103	Woodworking 1A: Machinery & Methods	2
CMM105	Woodworking 1B: Machinery & Methods	3
CMM107	Woodworking 2: Materials and Processes	5
CMM109	Workplace Safety	1
CMM111	Wood Finishing A	1
CMM113	Laminates 1	1
CMM115	Drawing 1	1
CMM117	Drawing 2	1
	Total Semester Credit Hours	15

2nd Semester(Freshman)		
Course Code	Course Title	Credit Unit/ Hours
CMM102	Laminates 2	1
CMM104	Surfaces 2	1
CMM106	Cabinetmaking, Millwork & Furniture 1	5
CMM108	Cabinetmaking, Millwork, and Furniture 2	5

CMM110	Tool & Machine Maintenance	1
CMM112	Wood Finishing B	1
CMM114	AutoCAD for Cabinet Drawing 1	1
CMM116	AutoCAD for Cabinet Drawing 2	1
	Total Semester Credit Hours	16

CMM101 Surfaces 1 1 Credit

•This course will take the learner through the process of fabricating a countertop with solid surface (Corian). Students learn about the advantages and limitations of solid surface material in different applications, and types of adhesives for seaming and installation. Students will learn tooling and fabrication techniques for various edge treatments, fabricate a coved backsplash, make a cut-out for an appliance, as well as inlay and repairing solid surface.

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CMM103 Woodworking 1A: Machinery & Methods 2 Credits

•Introduces the operation of traditional woodworking equipment. Students perform numerous exercises to gain familiarity with portable power tools and industrial woodworking machinery while building their skills and familiarity with wood. Units include layout, sawing, surfacing, boring, and sanding

CMM105 Woodworking 1B: Machinery & Methods 3 Credits

Introduces the operation of traditional woodworking equipment. Students perform numerous exercises to gain familiarity with portable power tools and industrial woodworking machinery while building their skills and familiarity with wood. Units include sawing, surfacing, boring, sanding, and a completed final project.

CMM107 Woodworking 2: Materials and Processes 5 Credits

Building on skills acquired in Woodworking 1, students incorporate an understanding of wood as a material to properly execute joinery and cabinetry projects. Instruction includes units in shaping, adhesives, joinery and face-frame cabinetry.

CMM109 Workplace Safety 1 Credit

A safe working environment is not only essential, it is the law. This course covers several key areas of OSHA workplace safety, including: proper procedures for locking out and tagging equipment to be serviced, HASCOM (Hazardous Materials Communication), PPE (Personal Protective Equipment) and proper machine guarding.

CMM111 Wood Finishing A 1 Credit

A safe working environment is not only essential, it is the law. This course covers several key areas of OSHA workplace safety, including: proper procedures for locking out and tagging equipment to be serviced, HASCOM (Hazardous Materials Communication), PPE (Personal Protective Equipment) and proper machine guarding.

CMM111 Wood Finishing Applications and Methods 1 Credit

Finishing is both an art and a science. This course demystifies the process of finishing wood and explores the materials used. Hand applied, brushed and sprayed finishes are covered. Proper finish selection and safe use of finishing products are emphasized.

CMM113 Laminates 1 Credit

This course will take the learner through the process of working with high pressure decorative laminate (plastic laminate). Students learn about selecting proper grades and textures of plastic laminate, types of adhesives, equipment, and tooling used for properly fabricating laminate products.

CMM115 Drawing 1 1 Credit

Drawing is essential for quickly and accurately communicating three-dimensional ideas. This class will introduce the learner to drawing it relates to woodworking occupations. Areas of instruction include sketching techniques, orthographic and isometric projection, and hand drafting.

CMM117 Drawing 2 1 Credit

Building on skills acquired in Drawing 1, this course provides additional experience with hand drafting, as well as an introduction to Computer-aided Design (AutoCAD).

CMM102 Laminates 2 1 Credit

This course covers the process of fabricating custom plastic laminate countertops including seaming and inlaying. Students will learn a variety of tooling and fabrication techniques to produce solid wood, decorative, miter-fold, custom-bevel, and post-formed edge treatments.

CMM104 Surfaces 2 1 Credit

This course covers the process of working with fiber phenolic resin and wood countertops. Students will learn how to fit, seam, fabricate edges, install and finish fiber resin countertops, and fabricate butcher-block and breadboard-end wood surfaces.

CMM106 Cabinetmaking, Millwork & Furniture 1 5 Credits

Planning and execution of cabinet, millwork and furniture projects are explored in this class. Standards for kitchen cabinetry and design are applied as students work together in teams on a group project. Additional areas of study include: jigs and fixtures, 32mm cabinetmaking and leg and rail furniture

CMM108 Cabinetmaking, Millwork, and Furniture 2 5 Credits

Preparation for employment is emphasized in the final quarter of this program as students propose and execute projects of their choice. Students have the opportunity to experience a real work environment while completing an internship with an area employer. Areas of exploration include veneering, CNC technology and curved and circular work.

CMM110 Tool & Machine Maintenance 1Credit

Proper maintenance is essential in order to obtain accurate and repeatable results. This course focuses on keeping machinery in proper working order and maintaining sharp cutting tools. Students learn to troubleshoot problems and to establish routine maintenance procedures.

CMM112Wood Finishing Processes and Colorants 1 Credit

This course explores multi-step finishes, including stains, wash coats, and glazes. In addition, this course will expose students to methods for color matching and repairing damaged finishes.

CMM114 AutoCAD for Cabinet Drawing 1 1 Credit

Expanding on concepts introduced in Drawing 1 & 2, this class builds competence in using AutoCAD as a tool to communicate. 32mm cabinetry, architectural layout and cabinet design are emphasized. Students learn to develop working drawings and details for cabinet, millwork and furniture projects.

CMM116 AutoCAD for Cabinet Drawing 2 1 Credit

Expanding on concepts covered in AutoCAD for Cabinet Drawing 1, this course focus on developing proficiency with AutoCAD, as well as improving understanding of cabinetry and furniture design. Students learn to develop working drawings and details for cabinet, millwork and furniture projects.

DIGITAL PHOTOGRAPHY AND DESIGN CERTIFICATE

Students who aspired to work as a commercial photographer, create art, or simply enhance his/her practice, this certificate program will make you become an expert photographer. You will learn how to use the fundamentals of photography to improve your ability to take and share pictures. In addition, candidates will learn how to control the camera, the process, and the lighting in order to get the results you desire. Throughout this program, candidates will learn how to create photographs that affect people, make them think, gain their interest, and touch their emotions. Finally, candidates will learn how to effectively manage the commercial business elements of the photography profession.

Duration of 4 month, 3-5 hours of coursework per week

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
GRD 141 -	Graphic Design I	4
GRD 142 -	Graphic Design II	4
GRD 167 -	Photographic Imaging I	3
GRD 168 -	Photographic Imaging II	3
	Total Semester Credit Hours	14

Total Digital Photography and Design Certificate: 14 Credits

GRD 141 - Graphic Design I 4 Credits
This course introduces the conceptualization process used in visual problem solving. Emphasis is placed on learning the principles of design and on the manipulation and organization of elements. Upon completion, students should be able to apply design principles and visual elements to projects.

GRD 142 - Graphic Design II 4 Credits
This course covers the application of visual elements and design principles in advertising and graphic design. Topics include creation of various designs, such as logos, advertisements, posters, outdoor advertising, and publication design. Upon completion, students should be able to effectively apply design principles and visual elements to projects.
Prerequisite(s): Successful completion of GRD 141 with a grade of "C" or better.

GRD 167 - Photographic Imaging I 3 Credits
This course introduces basic camera operations and photographic production. Topics include subject composition, depth of field, shutter control, light control, color, photo-finishing, and digital imaging, correction and output. Upon completion, students should be able to produce traditional and/or digital photographic prints with acceptable technical and compositional quality.

GRD 168 - Photographic Imaging II 3 Credits
This course introduces advanced camera operations and photographic production. Topics include lighting, specialized equipment, digital image correction and output, and other methods and materials. Upon completion, students should be able to demonstrate proficiency in producing high quality photographic prints.

FUNERAL DIRECTING, CERTIFICATE OF SPECIALIZATION

This program prepares the student for licensure as a funeral director and entry-level employment in a Nigerian funeral establishment, as well as other states with similar licensing regulations. Funeral Directing courses are available to students who have been admitted to the Funeral Directing Program and/or have departmental approval. The Certificate focuses solely on funeral directing, with no courses in embalming. It is a nontechnical certificate, geared toward the business and public relations aspects of operating a funeral home.

Funeral directors use helping skills to assist families in coping with grief, adjusting to new situations, and making appropriate funeral arrangements. The successful funeral director possesses emotional stability, the desire to serve others, and good physical health to withstand the irregular working hours and the obvious stresses of the job. Good grooming habits are essential, as the funeral director must reflect the high standards of care the families will receive at the funeral home.

Prior coursework in public speaking, accounting, and business would be helpful for students interested in this program.
This academic program is designed to meet specific state or professional needs.
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1. demonstrate competency as a funeral director, as defined by state and nationally accepted standards.
2. explain how the treatment, handling, and disposition of the dead human body meets the sociological, psychological, theological, physical, and legal needs of the family and the community.
3. apply knowledge of the state and federal laws regulating funeral service practice.
4. practice varieties of funeralization rites and ceremonies, as seen in major religious and ethnic subcultures, fraternal, and military groups in the United States.
5. counsel families about funerals prior to a death, during the time of the funeral, and after the funeral.
6. adhere to high standards of ethical conduct in order to promote the dignity of funeral service.
7 utilize research to expand knowledge in the field of funeral service.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
FSE 101	History and Sociology of Funeral Service	3
FSE 107	Funeral Service Merchandising	2
FSE 201	Funeral Home Management	3
FSE 106	Mortuary Law and Ethics	3
COM 101	Oral Communication I	3
	Total Semester Credit Units	14

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
FSE 102	Dynamics of Grief Management	3
FSE 103	Funeral Directing	3
PSY 101	Introduction to Psychology	3
ACC 100	Applied Accounting	3
CMP 116	Computer Literacy	3
	Total Semester Credit Units	15

COM 101. Oral Communication I 3 Credits.
Oral Communication I is a basic course in speech communication. It offers students an opportunity to explore effective one-to-one, small group, and large group oral communication processes. Emphasis is placed on a theoretical/conceptual approach as well as skill development and application of oral communication concepts to various communication settings and relationships.

ACC 100. Applied Accounting. 3 Credits.

An introductory course in the principles of accounting with emphasis on practice in bookkeeping techniques, designed to familiarize career students with the basic accounting system and the knowledge of keeping records.
Prerequisite: Reading Proficiency.

CMP 116. Computer Literacy. 3 Credits.
This course explores the terminology and concepts of computers including file management, Internet browsers, and web page development. Students gain proficiency using productivity tools such as word processors, presentation software, electronic spreadsheets and electronic mail to solve problems, communicate, and manage information to make informed decisions. Students will also develop a computer application.
Prerequisite: Reading Proficiency.

FSE 101. History and Sociology of Funeral Service. 3 Credits.
This course surveys funeral and burial customs associated with the beliefs and practices in various cultures from the early Egyptians to present day. In addition, the general principles related to customs, religions, human relations, social behavior, and their influences on funeral practices will be examined.
Prerequisites: Reading Proficiency.

FSE 107. Funeral Service Merchandising. 2 Credits.
Funeral Service Merchandising introduces the practical aspects of product knowledge and merchandising for caskets, outer burial containers, and other related funeral service merchandise.
Prerequisite: Reading Proficiency.

FSE 106. Mortuary Law and Ethics. 3 Credits.
Mortuary Law and Ethics introduces legal and ethical issues in the funeral service profession. This includes the sources of business law, mortuary law, rights and duties regarding disposition of dead bodies, state and federal regulation of funeral homes, funeral directors and cemeteries, probate law, and funeral professional ethics.
Prerequisites: Reading Proficiency.

FSE 102. Dynamics of Grief Management 3 Credits.
Dynamics of Grief Management explores the topic of funeral service psychology, which includes the theories of grief, the purposes of the funeral rite, and the importance of interpersonal communication skills and basic helping techniques.
Prerequisites: Reading Proficiency.

FSE 103. Funeral Directing. 3 Credits.
Funeral Directing introduces the primary duties and responsibilities of the funeral director. Special emphasis is placed on the funeral director's role in working with the family of the decedent, as they select options for funeral rites, ceremonies, and committal services. Legal

and ethical obligations, as well as the value of effective communication skills, are also examined.
Prerequisite: Reading Proficiency.

FSE 201. Funeral Home Management. 3 Credits.
Funeral Home Management introduces management principles for funeral home operations. This includes human resources, financial, marketing, facilities, and office management as well as their application to the small business environment.
Prerequisites: Reading Proficiency.

PSY 101 Introduction to Psychology 3 Credits
An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

INTERIOR DESIGN PROFESSIONAL, CERTIFICATE OF SPECIALIZATION

This certificate program is designed for graduates of two-year interior design programs to meet the educational standards required to become a certified professional interior designer. The coursework will address the following content areas of the national certification requirements: building systems, construction standards, design application and specifications, and building and life safety codes. The program will also provide students with the advanced research, graphic, and computer-aided design skills to successfully apply both the theoretical and practical knowledge required for employment as a professional interior designer.

1st Semester		
Course Code	Course Title	Credit Unit/ Hours
ART 285	Interior Design Codes and Specifications	3
ART 286	Interior Design Business Practices and Ethics	3
ART 287	Architectural Graphics and Technology II	3
	Total Semester Credit Units	9

2nd Semester		
Course Code	Course Title	Credit Unit/ Hours
ART 288	Interior Detailing and Construction Documentation	3
ART 289	Interior Design Research Methods	2
ART 155	Bath Design	3
ART 156 or	Advanced Kitchen Design	3

ART 251 or	Computer Aided Kitchen and Bath Design	3
ART 152	Lighting Design	3
ART 288	Interior Detailing and Construction Documentation	3
AT 289	Interior Design Research Methods	2
ART 155	Bath Design	
ART 156 or	Advanced Kitchen Design	3
ART 251 or	Computer Aided Kitchen and Bath Design	3
ART 152 or	Lighting Design	3
ART 290	Interior Design Professional Preparation	1
	Total Semester Credit Units	18

ART 152. Lighting Design. 3 Credits.

Lighting Design introduces students to the functional and technical aspects of designing interior environments utilizing artificial and natural lighting. Topics include: lighting sources, fixture selection, color and human response, lighting calculations, codes, and application of lighting principles to residential and commercial interior design projects.

Pre-requisites: Successful completion of ART 151 with a minimum grade of "C"

ART 155. Bath Design. 3 Credits.

Bath Design explores the application of design principles and presentation standards in the planning and designing of safe and functional bathrooms. This course meets the standards established by the National Kitchen and Bath Association (NKBA).

Prerequisites: Successful completion of ART 151, ART 154 a with a minimum grade of "C",

ART 156. Advanced Kitchen Design. 3 Credits.

Advanced Kitchen Design applies design principles and presentation standards in the planning and designing of efficient kitchen layouts. Following National Kitchen and Bath Association (NKBA) guidelines, students obtain experience studying proper cabinet, appliance, and fixture selection.

Pre-requisites: Successful completion of ART 151, ART 154 with a minimum grade of "C", and Reading Proficiency.

ART 285. Interior Design Codes and Specifications. 3 Credits.

Interior Design Codes and Specifications explores codes, standards, and federal regulations that impact the design of the built environment. Students will analyze interior codes related to building and life safety, accessibility standards, sustainability practices, mechanical and electrical requirements, and furniture and finish selections. Students will then apply the codes requirements to interior design projects.

Pre-requisites: Successful completion of ART 251 with a minimum grade of "C" and Reading Proficiency.

ART 286. Interior Design Business Practices and Ethics. 3 Credits.

Interior Design Business Practices and Ethics provides an overview of common business practices and ethical standards in the interior design profession. Students will gain an

understanding of the characteristics of the interior design profession, analyze strategies and solutions to common ethical situations, and develop interior design business documents.
Pre-requisites: Successful completion of ART 251 with a minimum grade of "C" and Reading Proficiency.

ART 287. Architectural Graphics and Technology II. 3 Credits.
Architectural Graphics and Technology II builds upon previous computer-aided interior design knowledge and introduces students to methods for utilizing building information modeling (BIM) software to create interior design drawings. Students will create presentation drawings, construction documents, schedules, and construction details for interior environments utilizing BIM software.
Prerequisites: Successful completion of ART 154, ART 251 both with minimum grades of "C", and Reading Proficiency.

ART 288. Interior Detailing and Construction Documentation. 3 Credits.
Interior Detailing and Construction Documentation focuses on the process of developing concept drawings into comprehensive detailed drawings to clearly communicate design choices in interior environments. Students will create detailed casework and construction drawings utilizing computer-aided design software.
Pre-requisites: Successful completion of ART 186, ART 287 both with minimum grades of "C" and Reading Proficiency.

ART 289. Interior Design Research Methods. 2 Credits.
Interior Design Research Methods explores common research methods used in the interior design profession. Students will research interior design-related topics utilizing quantitative and qualitative methods and synthesize information into a comprehensive research project.
Pre-requisites: Successful completion of ART 252, ENG 101 both with minimum grades of "C" and Reading Proficiency.

ART 290. Interior Design Professional Preparation. 1 Credit.
Interior Design Professional Preparation prepares students for the first phase of interior design professional certification. Students will explore the Interior Design Fundamental Examination (IDFX) content areas that cover the knowledge and skills interior designers must acquire to protect public health, safety, and welfare.
Pre-requisites:Successful completion of ART 285, ART 286, ART 287, ART 288, ART 289 all with minimum grades of "C" and Reading Proficiency.

ART 251. Computer Aided Kitchen and Bath Design. 3 Credits.
Utilizing 3-D design software, students will learn to layout, design and specify residential kitchens and baths. Students will create 2-D and 3-D visual presentations and renderings of kitchen and bath interiors.

WATER AND WASTEWATER TECHNOLOGY CERTIFICATE

The Water and Wastewater Technology program at Nubian American Advanced College (NAAC) is offered both online and face to face and designed for entry-level employment in water and wastewater treatment facilities. Students acquire understanding of operator responsibilities regarding the safety of communities, personnel and environment. Coursework includes laboratory testing and analyses for operational control and regulatory compliance, as well as applying biological, chemical and mechanical knowledge and skills to the operation of water and wastewater treatment facilities.

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
ENR 105	Safety, Health and Environment	3
ENR 107	Mechanical Fundamentals	3
ENR 112	Print Reading	3
WAT 101	Introduction to the Water Industry	3
ENR 116	Instrumentation and Control	4
	Total Semester Credit Units	16

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
WAT 105	Laboratory Procedures	3
WAT 110	Water Treatment I	3
WAT 115	Water Treatment II	3
WAT 120	Wastewater Treatment	3
ENR 220	Practical Applications	2
MAT 137	Applied Algebra	3
	Total Semester Credit Units	17

ENR 105. Safety, Health and Environment 3 Credits

This course covers the personal protective equipment and proper safe work practices and procedures commonly used in the energy industry. Students will also gain a working knowledge of standard safety, health and environmental practices and regulations set by various government entities.

ENR 107. Mechanical Fundamentals 3 Credits
This course introduces mechanical concepts commonly found in a plant setting. Topics covered include hand tools, power tools, piping, valves, steam traps and strainers. In addition, pumps, compressors, drivers, fans and rotating equipment are covered. Hydraulics, bearings, seals and lubrication are a focus in this course, as well as heat exchanger designs. Plant terminology and operator expectations are covered.

ENR 112. Print Reading 3 Credits
This course covers schematics, prints, and piping and instrument diagrams used in the energy industry. Students will learn how to read and interpret block and single-line diagrams, which will prepare them for the logic and electrical schematics included in this course.

WAT 101. Introduction to the Water Industry 3 Credits
This course provides an overview of the water treatment program and the water treatment industry. It introduces students to water and wastewater treatment occupations and processes. Students study operator roles, industry requirements, common terminology and basic equipment as well as water use and characteristics.

ENR 116. Instrumentation and Control 4 Credits
This course provides a comprehensive study of instrumentation components, control theory, control systems and typical controllers associated with the operation of energy facilities.

WAT 105. Laboratory Procedures 3 Credits
Students will be introduced to the chemical makeup of water and the impurities that must be removed for purification processes. Common procedures for testing and monitoring water and wastewater quality will be studied along with the calculation of chemical dosages and feed rates.

WAT 110. Water Treatment I 3 Credits
This course will cover water sources and protection with a focus on pre and primary methods and equipment. Filtration, clarification and basic softening methods will also be studied along with pump types and applications. An emphasis will be placed on operating procedures and troubleshooting for each type of process.

WAT 115. Water Treatment II 3 Credits
This course will instruct students on secondary and final treatment methods, processes and equipment. Disinfection methods and distribution systems will be covered in detail along with sampling, monitoring and reporting based on governmental regulations. Routine operator duties along with problem solving methods will be identified.

WAT 120. Wastewater Treatment 3 Credits
This course is designed to assist students in understanding the processes and equipment used in a wastewater treatment plant. The concepts used for biological treatment and troubleshooting

the various processes will be emphasized. Collection systems operation and maintenance will also be covered.

ENR 220. Practical Applications **2 Credits**

Students will participate in hands-on lab activities, internships or industry job shadowing to gain entry-level job competencies.

137. Applied Algebra **3 Credits**

An intermediate algebra course for students enrolled in technology programs. Topics include properties of real numbers, algebraic expressions, factoring, formula manipulation, graphing, linear equations, quadratic equations, solving systems of equations, simultaneous equations, exponents, radicals and logarithmic equations.

FILMMAKING - GENERAL - CERTIFICATE LEVEL 2

Students wishing for a complete education in film production without the academic courses required by an associate degree should pursue this certificate. All courses in this certificate apply towards the AAS in Filmmaking.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
RTV 132	TV/Video Field Production	3
RTV 130	Audio/Radio Production I	3
RTV 231	Film and Video Editing	3
FLM 131	Survey of the Motion Picture	3
	Total Credit Units/ Hours	12

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
RTV 232	TV/Video Production Workshop I	3
RTV 132	Scriptwriting	3
FLM 135	Production Management	3
FLM 233	Advanced Film and Video Editing	3
	Total Credit Units/ Hours	12

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
FLM 234	Directing for Film or Video	3
FLM 237	Cinematography	3

FLM 235	Screenwriting for Features, Shorts and Documentaries	3
FLM 134	Lighting for Film or Video	3
	Total Credit Units/ Hours	12

	4th Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
FLM 230	Audio Post Production	3
FLM 236	Production Development - Producing	3
RTV 240	Portfolio Development (Capstone) OR	3
FLM 280	Cooperative Education - Cinematography and Film/Video Production	3
	Total Credit Units/ Hours	9

Total Credits 48

RTV 132TV/Video Field Production 3 Credits

Video field camera set up and operation for broadcast and digital media. Incorporates basic editing and field audio techniques.

RTV 130 Audio/Radio Production I 3 Credits

Concepts and techniques of sound production including basic recording, mixing, and editing techniques.

FLM 134 Lighting for Film or Video 3 Credits

Lighting techniques for 16mm film or video production. (This class demonstrates advanced lighting techniques for 16mm film and video productions. Using a variety of lab projects and location settings, students will use lights, filters, in-camera special effects and mood setting techniques to enhance shot composition and camera movement. Topics also include operating film cameras, light meters and selecting film stock. Students are required to attend additional lab hours outside of class.)

FLM 131Survey of the Motion Picture 3 Credits

Overview of film History, Civilization, and techniques including introduction to cinematic elements and approaches to analysis and criticism.

RTV 132Scriptwriting 3 Credits

Writing scripts for film and electronic media. Emphasizes format and style for commercials, public service announcements, promos, news, and documentaries.

FLM 135 Production Management 3 Credits

Managing above- and below-the-line film or video production costs. Emphasizes analysis of scripts and treatments to determine production costs, crewing requirements, location needs, equipment rentals, and associated production costs.

RTV 231 Film and Video Editing 3 Credits
Film and broadcast editing for the preparation and completion of shorts, trailers, documentaries, and features.

RTV 232 TV/Video Production Workshop I 3 Credits
Application and design of video productions in location or studio shoots with real deadlines and quality control restrictions.

RTV 234Portfolio Development 3 Credits
Preparation and presentation of a portfolio suitable for employment in the media industry. This course is intended to be taken in the last semester.

FLM 230Audio Post Production 3 Credits
The technology, creative application and requirements for producing audio soundtracks for film and video. (This course explores the technology, creative application and requirements for producing audio soundtracks for film and video projects. Topics include time code, synchronization, mixing, Foley, dialog replacement, sound effects and location sound. The students will work on computerized workstations to produce finished audio tracks for various projects. Students are required to attend additional lab hours outside of class.)

FLM 233 Advanced Film and Video Editing 3 Credits
Exploration of the creative possibilities of non-linear film and video editing. Includes editing aesthetics, titles, graphic design, compositing, and special effects.

FLM234Directing for Film or Video 3 Credits
Directing to lead a production team. (This course teaches the craft of directing to students who aspire to lead a production team. By analyzing the work of classic and contemporary directors, the class investigates the art and language of filmmaking. Topics include framing and composition, camera angles, camera movement, blocking of actors, visualizing action, and creating a sequence, script breakdown, and techniques for establishing mood, character, and conflict.)

FLM237 Cinematography 3 Credits
Theoretical elements and practical applications of cinematography. (This class teaches theoretical elements and practical application of cinematography. While learning techniques of film production, students study historical and contemporary trends and styles. Theoretical topics include differences in film stocks, exposure, color theory and filters. Professional techniques that alter an image?s character are demonstrated and discussed. Practical tests and scenes are shot using color and black and white film stocks. Students are required to attend additional lab hours outside of class.)

FLM 235Screenwriting for Features , Shorts and Documentaries 3 Credits
Screenwriting for the principle genres of film. (This class emphasizes screenwriting for the principle genres of film. Students will create treatments from dramatic concepts, turn these treatments into screenplays and complete full shooting scripts by the course's end. Topics include scriptwriting, formatting conventions and structural analysis of comedies, dramas, documentaries and short films. At the conclusion of the course students will submit an original script to a scriptwriting contest. Students are required to attend additional lab hours outside of class.)

FLM 236 Production Development - Producing 3 Credits
Sequential steps of supervision in all phases of film production and distribution. Includes resource acquisition and allocation. (During this class the student will address three primary questions posed when developing an idea for a film: What are you going to film? How are you going to film it? How are you going to structure the production? This class will teach students how to explore these questions fully before production begins. Class discussions, student projects and instructor analysis will emphasize the pre-production process: storyboarding shot lists, scheduling, location scouting, stock footage and budgeting. The class will also address design and aesthetic decisions in costuming, makeup and set design. Students are required to attend additional lab hours outside of class.)

FLM 238Cooperative Education / Cinematography and Film / Video Production 3 credits
Career-related activities encountered in the student?s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

FILMMAKING - FILM/VIDEO AND SPECIAL EFFECTS SPECIALIZATION - CERTIFICATE LEVEL I -

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
FLM 133	Video Graphics and Visual Effects I	3
RTV 132	TV Field Production	3
RTV 231	Film and Video Editing	3
FLM 131	Survey of the Motion Picture	3
RTV 130	Audio/Radio Production I	3
FLM 239	Film Style 3-D Animation Production	15
	Total Credit Units/ Hours	18

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
RTV 232	TV/Video Production Workshop I	3
FLM 135	Production Management	3
FLM 238	Video Graphics and Visual Effects II	3
FLM 134	Lighting for Film or Video	3
FLM 233	Advanced Film and Video Editing	3
FLM 237	Cinematography	3
	Total Credit Units/ Hours	18

RTV 132TV/Video Field Production 3 Credits

Video field camera set up and operation for broadcast and digital media. Incorporates basic editing and field audio techniques.

RTV 130 Audio/Radio Production I 3 Credits

Concepts and techniques of sound production including basic recording, mixing, and editing techniques.

FLM 131Survey of the Motion Picture 3 Credits

Overview of film History, Civilization, and techniques including introduction to cinematic elements and approaches to analysis and criticism.

FLM 133Video Graphics and Visual Effects I 3 Credits

A course in the applications of computers for video production. Design of computer graphic workstations and development of a rationale for selecting software, hardware, and peripherals.

FLM 134 Lighting for Film or Video 3 Credits
Lighting techniques for 16mm film or video production. (This class demonstrates advanced lighting techniques for 16mm film and video productions. Using a variety of lab projects and location settings, students will use lights, filters, in-camera special effects and mood setting techniques to enhance shot composition and camera movement. Topics also include operating film cameras, light meters and selecting film stock. Students are required to attend additional lab hours outside of class.)

FLM 135 Production Management 3 Credits
Managing above- and below-the-line film or video production costs. Emphasizes analysis of scripts and treatments to determine production costs, crewing requirements, location needs, equipment rentals, and associated production costs.

RTV 231 Film and Video Editing 3 Credits
Film and broadcast editing for the preparation and completion of shorts, trailers, documentaries, and features.

RTV 232 TV/Video Production Workshop I 3 Credits
Application and design of video productions in location or studio shoots with real deadlines and quality control restrictions.

FLM 233 Advanced Film and Video Editing 3 Credits
Exploration of the creative possibilities of non-linear film and video editing. Includes editing aesthetics, titles, graphic design, compositing, and special effects.

FLM237 Cinematography 3 Credits
Theoretical elements and practical applications of cinematography. (This class teaches theoretical elements and practical application of cinematography. While learning techniques of film production, students study historical and contemporary trends and styles. Theoretical topics include differences in film stocks, exposure, color theory and filters. Professional techniques that alter an image?s character are demonstrated and discussed. Practical tests and scenes are shot using color and black and white film stocks. Students are required to attend additional lab hours outside of class.)

FLM 238 Video Graphics and Visual Effects II 3 Credits
Advanced concepts of designing vector and raster graphics, executing rendering techniques, designing and producing three-dimensional (3-D) materials, and selecting hardware, software, and peripherals for video production.

FLM 239 Film-Style 3-D Animation Production 3 Credits
Techniques in 3-D animation for film-style and live action production. Topics include animations fundamentals, 3D modeling, splines and lofts, keyframing, particle effects, rendering.

FILMMAKING - EDITING - SPECIALIZATION - CERTIFICATE LEVEL 1

This curriculum prepare Students for a career in film editing after acquiring hundreds of hours using linear, non-linear video and film editors. The certificate also includes courses in audio post production using computer programs such as Pro Tools. All courses in this certificate apply towards the AAS in Filmmaking

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
FLM 131	Survey of the Motion Picture	3
RTV 232	TV/Video Field Production	3
RTV 130	Audio/Radio Production I	3
RTV 231	Film and Video Editing	3
	Total Credit Units/ Hours	12

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
FLM 135	Production Management	3
FLM 133	Video Graphics and Visual Effects I OR	3
FLM 233	Advanced Film and Video Editing	3
FLM 230	Audio Post Production	3
FLM 238	Cooperative Education - Cinematography and Film/Video Production (Capstone)	3
	Total Credit Units/ Hours	12

Total Credits 24

RTV 130 Audio/Radio Production I 3 Credits
Concepts and techniques of sound production including basic recording, mixing, and editing techniques.

FLM 131Survey of the Motion Picture 3 Credits
Overview of film History, Civilization, and techniques including introduction to cinematic elements and approaches to analysis and criticism.

FLM 133Video Graphics and Visual Effects I 3 Credits
A course in the applications of computers for video production. Design of computer graphic workstations and development of a rationale for selecting software, hardware, and peripherals.

FLM 135 Production Management 3 Credits
Managing above- and below-the-line film or video production costs. Emphasizes analysis of scripts and treatments to determine production costs, crewing requirements, location needs, equipment rentals, and associated production costs.

RTV 231 Film and Video Editing 3 Credits
Film and broadcast editing for the preparation and completion of shorts, trailers, documentaries, and features.

RTV 232 TV/Video Production Workshop I 3Credits
Application and design of video productions in location or studio shoots with real deadlines and quality control restrictions.

FLM 233 Advanced Film and Video Editing 3 Credits
Exploration of the creative possibilities of non-linear film and video editing. Includes editing aesthetics, titles, graphic design, compositing, and special effects.

FLM 230 Audio Post Production 3 Credits
The technology, creative application and requirements for producing audio sound tracks for film and video. (This course explores the technology, creative application and requirements for producing audio soundtracks for film and video projects. Topics include time code, synchronization, mixing, Foley, dialog replacement, sound effects and location sound. The students will work on computerized workstations to produce finished audio tracks for various projects. Students are required to attend additional lab hours outside of class.)

FLM 238Cooperative Education / Cinematography and Film / Video Production 3 Credits
Career-related activities encountered in the student?s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

NURSING—PRACTICAL NURSING CERTIFICATE

The Nursing Program is a 1 + 1, Practical Nurse Certificate to Associate Degree Nurse (RN) Program. The program is part of the NAAC Nursing Program, a collaborative effort between

Classroom education is delivered by instructors on campus and from other colleges within the consortium through the Interactive Video Network (IVN) system. Some courses/components will be offered in an online format. Laboratory and simulation practice occur at each location. Clinical opportunities are arranged locally.

Career Opportunities

Graduates of nursing programs are in high demand in and throughout the United States. The Nursing Program prepares an individual to practice nursing independently, inter-dependently, and safely to individuals in a variety of settings.

	1st Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
PSY 101	Introduction to Psychology	3
NUR 120	Foundations of Nursing	3
NUR 121	Practical Nursing I	3
NUR 122	Clinical Practice I	3
BIO 220	Anatomy and Physiology I	3
BIO 220L	Anatomy and Physiology I Lab	1
	Total Semester Credit Units	16

	2nd Semester (Freshman)	
Course Code	Course Title	Credit Unit/ Hours
BIO 221	Anatomy and Physiology II	3
BIO 221L	Anatomy and Physiology II Lab	1
PSY 250	Developmental Psychology	3
NUR 127	Practical Nursing II: Introduction to Medical/Surgical Nursing	2
NUR 145	Introduction to Maternal/Child Nursing	2
NUR 124	Clinical Practice II	3
	Total Semester Credit Units	14

	3rd Semester (Sophomore)	
Course Code	Course Title	Credit Unit/ Hours
ENG 110	College Composition I	3
NUR 126	Clinical Practice III	3
NUR 129	Practical Nursing III	3
PHR 215	Introduction to Pharmacology	3
	Total Semester Credit Units	12

ENG 101 - English Composition I **3Credts**

A study of style, syntax, and basic organizational patterns. Topics include various rhetorical patterns, audience, purpose, diverse perspectives, writing, revising, and editing. Research paper required.

PSY 101 Introduction to Psychology 3 Credits

An introduction into the empirical study of human behavior and mental processes. Topics to be treated include biological bases of behavior, sensation and perception, states of consciousness, learning, memory, motivation and emotion, language, lifespan development, intelligence, stress and health, social behavior, personality, and abnormal behavior and treatment; applications of psychology in a culturally diverse world.

NUR 127. Practical Nursing II: Introduction to Medical/Surgical Nursing 2 Credits

Examine safe and effective client care of the bio-psychosocial individual along the health illness continuum. Students will be involved in the teaching and learning activities that enhance critical thinking skills, examine aspects of self-determination, health promotion, disease prevention and evidence based practice. Students will increase their understanding of nursing process and prioritization in the care of culturally unique clients across the lifespan in an ethical and legal manner. **Corequisites:** NUR 124 and NUR 145.

NUR 124. Clinical Practice II 3 Credits

Gain additional nursing skills in the laboratory and apply those advanced skills in the clinical setting. Utilize the tools of informatics, nursing process, clinical reasoning, therapeutic communication, evidence-based practice, and management concepts to provide safe and culturally sensitive client care for individuals across the lifespan in a variety of medical facilities.

Pre-requisites: Successful completion of NUR 120, NUR 121, and NUR 122 with a grade of "C" or better.. **Corequisites:** NURS 145 and NURS 127.

NUR 127. Practical Nursing II: Introduction to Medical/Surgical Nursing 2 Credits

Examine safe and effective client care of the bio-psychosocial individual along the health illness continuum. Students will be involved in the teaching and learning activities that enhance critical thinking skills, examine aspects of self-determination, health promotion, disease prevention and evidence based practice. Students will increase their understanding of nursing process and prioritization in the care of culturally unique clients across the lifespan in an ethical and legal manner.

Pre-requisites: Successful completion of NUR 120, NUR 121 and NUR 122with a grade of "C" or better. **Corequisites:** NUR 124 and NUR 145

NUR 145. Introduction to Maternal/Child Nursing 2 Credits

Focus on the nursing care of the woman, newborn, child and families. Examine health maintenance and study the diseases and disorders affecting women, newborns, and children. Gain an understanding of pediatric growth and development and common illnesses. Use knowledge of family centered care, teaching and learning principles, and therapeutic communication while working within the interdisciplinary team to assist clients to use self-determination in decisions affecting their health.

Pre-requisites: Successful completion of NUR 120, NUR 121 and NUR 122 with a grade of "C" or better. **Corequisite:** NUR 124 and NUR 127.

NUR 126. Clinical Practice III 3 Credits

Refine nursing knowledge, skills and ethical comportment in the role of a practical nursing student to provide safe and effective care for clients across the lifespan with stable or predictable health problems and assisting with those whose conditions are critical or unpredictable. Critical thinking, effective and therapeutic communication, nursing process, management of nursing care, and delegation of unlicensed assistant persons are incorporated into the clinical experience.

Pre-requisites: Successful completion of NUR 124, NUR 127 and NUR 145with a grade of "C" or better. **Corequisite:** NUR 129

NUR 129. Practical Nursing III 3 Credits

This course will continue to examine evidence-based nursing interventions, nursing process, nutrition and drug therapy for health promotion and disease prevention in the culturally diverse client across the lifespan along the health illness continuum. Students will have access to additional knowledge in the areas of quality improvement, informatics, accountability, ethical, legal and professional issues of the practical nurse.

Pre-requisites: Successful completion of NUR 124, NUR127 and NUR 145with a grade of "C" or better. **Corequisite:** NUR 129.

NUR 120. Foundations of Nursing 3 Credits

Develop an understanding of the multidimensional base of nursing knowledge, including basic human needs, nursing process, nursing judgment, informatics, ethical and professional, health promotion and disease prevention concepts. Gain an understanding of the role of the practical nurse within the interdisciplinary team, the vital importance of communication while providing safe and quality client care, and how nurses use evidence-based information in their practice.

NUR 121. Practical Nursing I 3 Credits

Explore three core concepts of health assessment, nutrition and mental health as they relate to client care. Learn how the nurse incorporates this knowledge in caring for the diverse client from the moment they begin care for an individual to any point along the health-illness continuum.

NUR 122. Clinical Practice I 3 Credits

Apply the social, biological, behavioral and nursing science principles to simulated and actual client care in the nursing lab and during clinical in health care facilities. Students will see, practice and perform demonstrations of basic nursing skills and procedures in a supervised setting. Includes the study of math and medical terminology and use of the nursing process and critical thinking skills to organize and provide safe and effective client care.

BIO 220. Anatomy and Physiology I 3 Credits

This is the first of two courses in which anatomy and physiology are leveraged to present a unified picture of the structure and function of the organs and systems of the human body. The courses include biochemistry, cells, tissues, and the following systems: integumentary, skeletal, muscular, nervous, and special senses. Both gross and microscopic structures are studied.

BIO 220 Anatomy and Physiology I Lab 1 Credit

Anatomical structures will be studied at both gross and microscopic levels. Experiments are performed demonstrating fundamental physiological principles.

BIO 221. Anatomy and Physiology II 3 Credits

This is the second of two courses in which discussions of anatomy and physiology are interwoven in an attempt to present a unified picture of the structure and function of the organs and systems of the human body. The following systems are examined: endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive. Both gross and microscopic structures are studied.

Pre-requisites: Successful completion of BIO 220 and BIO 220Lwith a grade of "C" or better.

BIO 221L. Anatomy and Physiology II Lab 1 Credit

Anatomical structures will be studied at both gross and microscopic levels. Experiments are performed demonstrating fundamental physiological principles.

PSY 250. Developmental Psychology 3 Credits

A study of human development through the life-span with an emphasis on physical, cognitive, social, emotional and personality development.

Pre-requisite: Successful completion of PSY 111 with a grade of "C" or better.

PHM 215. Introduction to Pharmacology 3 Credits

A fundamental discussion of the scope of pharmacology, including terminology used. Drug laws, dosage forms, and patient variabilities that affect drug usage will be covered. Important drugs used in practice will be studied, including basic principles, therapeutic uses, and adverse effects.

Pre-requisites: Successful completion of BIO 220 and BIO 220Lwith a grade of "C" or better.

COMMERCIAL MUSIC –CERTIFICATE OF ACHIEVEMENT

The Commercial Music certificate of achievement is designed so that upon completion the student will be equipped with the necessary technical skills to be employed as a professional in the field of Commercial Music Technology, Film Scoring, Video Game/ Audio Development, Music Business Entrepreneurship, Audio Forensics, and other Digital and Multi-Media Entertainment and Serious industries, involving music, audio and/or video.
The demand for certified music/audio technicians is extremely high due to the fast growing entertainment multi-media industry. This also includes such sectors as mobile phone entertainment, motion pictures animation (Foley) and video games to name a few. A Certificate of Achievement will be granted upon completion of all program requirements.

Program Goals and Objectives:

Upon completion of the program students will be able to

- Analyze music example recordings based on elements of music including form, style, rhythm, harmony, melody, timbre, texture, and dynamics, with an intermediate level of proficiency.
- Demonstrate intermediate mastery in their performance of two collegiate level pieces from contrasting styles, observing accurate pitches, rhythms, and interpretative markings.
  Program Requirements:

1st Semester (Freshman)		
Course Code	Course Title	Credit Unit/ Hours
MUS 101	Music Fundamentals	3
MUS 180	Fundamentals of Electronic Music	2
MUS 181A	Introduction to Electronic Music Studio	2
MUS 181B	Electronic Music Studio	2
MUS 182	Digital Audio Recording for Commercial Music	3
MUS 183	Keyboarding for Commercial Music	2
MUS 182	Digital Audio Recording for Commercial Music	3
MUS 183	Keyboarding for Commercial Music	2
MUS 284	Commercial Music Business Studies	3
MUS285	Songwriting for Commercial Music	3
	Total Semester Credit Units	20

MUS 101 - Music Fundamentals **3 Credits**
Introduction to music reading. Study of notation, rhythm, scales, intervals, and chords with emphasis on ear training. Recommended for elementary education majors and anyone interested in learning to sing or play an instrument.

MUS 180 - Fundamentals of Electronic Music 2 Credits
This course provides instruction in the use of synthesizers, Musical Instrument Digital Interface (MIDI), computers, musical acoustics, sound design, and music software. Emphasis is placed on technical, compositional, multimedia technology, and performance skills utilizing digital synthesizers in conjunction with computers and music software applications.

MUS 181A - Introduction to Electronic Music Studio. 2 Credits
In this course, students are introduced to audio recording, live sound reinforcement, signal processors, microphones, reference monitors, room acoustics, Musical Instrument Digital Interface (MIDI), computers, synthesizers, and software. Emphasis is placed on the technical and creative utilization of audio equipment in conjunction with the production of audio recordings and live sound reinforcement.

MUS 181B - Electronic Music Studio 2 Credits
This course is a continuation of MUSI 181A. It further explores the use of audio recording processes, synthesizers, computer hardware and software, and recording equipment.
Prerequisite: Successful completion of MUSI 181A with a minimum grade of C or equivalent Credit,

MUS 182 - Digital Audio Recording for Commercial Music 3 Credits
This course provides instruction on the functions and operations of digital music audio recording software such as Pro Tools. Emphasis is placed on recording, editing, and mixing digital audio in both Macintosh and PC computer environments.
Prerequisite: Successful completion of MUS 181A with a minimum grade of C Credit,

MUS 284 - Commercial Music Business Studies 3 Credits
In this course, students will examine the major components of the music industry. Topics will include publishing, copyrights, and recording/production contracts. Students will analyze industry trends, develop a comprehensive business plan, and explore job opportunities within the industry.

MUS 285 - Songwriting for Commercial Music 3 Credits
In this course, students will develop and improve their ability to write songs, lyrics, and melodies through analysis and application of techniques used by professional songwriters. Students will be introduced to contemporary music technology and an overview of the music business as they pertain to songwriting.

MUS 183 Commercial Keyboard: 2 Credits
Students learn the fundamental techniques and theory of commercial music on the piano, such as major and minor triads and pop songs, and apply their knowledge and skills in assignments using LogicPro software. 0-1 year of piano background is appropriate for taking this course, though at least minimal experience is recommended.

ACCOUNTING CERTIFICATE

This certificate program is designed for students who wish for specific training in accounting and other business subjects, to upgrade their present positions or to enter into business or industry. Students may complete this certificate by completing the courses that are listed below.
Accounting Certificate Curriculum Requirements
Accounting, Certificate Program Outcomes

Upon successful completion of all program requirements, graduates will be able to:

1. Demonstrate the use of generally accepted accounting principles, concepts and techniques in the recording and reporting of financial statements.
2. Analyze accounting information for decision making, including the areas of job cost, process cost, absorption and variable costing approaches, and relevant costs.
3. Use accounting software and spreadsheets.
4. Obtain successful employment in the Accounting field or upgrade skills for current employment.

1st Semester(Freshman)		
Course Code	Course Title	Credit Units/Hours
ACC 115 or	Financial Accounting	4
ACC 118	Managerial Accounting	4
ACC 125	Accounting Computer Applications I	3
ACC 233	Principles of Cost Accounting	4
ENG 101	Composition	3
	Total Semester Credit Hours	18

2nd Semester(Freshman)		
Course Code	Course Title	Credit Units/Hours
ACC 241 or	Federal Taxes I	3
BFN201	Principles of Finance	3
ACC 271	Intermediate Accounting I	3
BBG 115	Business Software Applications	3
BBG 231	Business Law I	3
BFN 110	Personal Finance or	3
ECO 101	Principles of Macroeconomics	3
	Total Semester Credit Hours	15

Grand Total: 33

ENG 101 - Composition **3 Credits**

College Composition engages students in critical observation, reading, and writing. The course prepares the student for the exposition, analysis, and argument required in college writing, and for meeting the conventions of college English. Writing assignments require that students develop their own points of view and demonstrate understanding of complex ideas and issues. Methods for research, including use of the library, appropriate documentation, and incorporation of sources in original papers will be taught through assigned writings

ACC 115 - Financial Accounting **4 Credits**

This course is designed to cover basic accounting theory and practice as applied to the complete accounting cycle, including the use of current accounting systems and procedures and the preparation of financial statements. The course also covers Long-term Assets, Current & Long-Term Liabilities, and Corporate Reporting and Analysis.

ACC 118 - Managerial Accounting **4 Credits**

This course is designed to cover the application of accounting principles and procedures to the cost control function of manufacturing business management. Emphasis is placed on managerial analysis and control, job order costing, process cost, standard cost, and variance analysis.

Pre-requisite: Successful completion of ACC 115 with a grade of C or better

ACC 125 - Accounting Computer Applications I **3 Credits**

This course is designed to teach accounting students about computerized integrated accounting and accounting spreadsheet applications using a standard Windows interface. Students will learn to operate the software by entering realistic accounting transactions for a variety of business applications and by generating financial statements, spreadsheets, and other management information reports. The techniques and terminology learned can be applied to other Window-based software packages.

Pre-requisite: Successful completion of ACC 115 with a grade of C or better

ACC 233 - Principles of Cost Accounting **4 Credits**

This course encompasses fundamental principles and procedures needed for planning, evaluating, and controlling the organization's internal activities. Students will be exposed to accounting systems that are designed to provide information for managers as they relate to decision making. Topics include: budgeting, relevant costing, absorption and direct costing models, production levels, and inventory evaluations. Students work with accounting information that includes job-order costing, process costing, and standard costs.

Pre-requisite: Successful completion of ACC 118 with a grade of C or better

ACC 241 - Federal Taxes I **3 Credits**

This course examines federal income taxation as it relates to individuals. Emphasis is on tax law, researching tax questions, the determination of taxable income, deductions, and the preparation of tax returns.

BFN201 - Principles of Finance **3 Credits**

This course offers an introduction to the basic principles of finance with an emphasis on the role a finance manager plays in the corporate world. Areas covered are financial analysis and forecasting, operating and financial leverage, short and long term financing alternatives, capital budgeting, time value of money, mergers and acquisitions, and international financial management.

Pre-requisites: Successful completion of ACC 118; MAT123 or MAT 167; ECN 101;ECN 102with a grade of C or better

ACC 271 - Intermediate Accounting I **3 Credits**

In this course, students will engage in an intensive study of financial accounting theory, focusing on revenue and expense recognition and the valuation and disclosure of financial statement elements.

Pre-requisite: Successful completion of ACC 118 with a grade of C or better

BBG 115 - Business Software Applications **3 Credits**

Using Microsoft Suite application software, students in this hands-on course will learn to use each of the software packages as they relate to the business environment. These software packages include an emphasis on Excel to build flexible spreadsheets used in business decision making, supplemented with Word to produce professional-looking documents, Access to select and analyze data to produce valid results, and Powerpoint to effectively present and communicate. Corequisite: MAT123

BBG 231 - Business Law I **3 Credits**

This course provides the student with an understanding of fundamental legal principles and their applications to business transactions and to individual rights and obligations. Crimes and torts are examined, and special emphasis is placed on the study of the law of contracts.

Pre-requisite: Successful completion of ENG 101 with a grade of C or better

BFN 110 - Personal Finance **3 Credits**

This course provides, in a non-technical presentation, a basic understanding of personal finance. The choices that consumers face in managing their finances are examined. The topics include personal income and budgeting, consumer credit, investing, taxes, housing, insurance, retirement, and estate planning.

ECO 101 - Principles of Macroeconomics 3 Credits.

This course introduces students to the basic concepts of the economic system. The first semester is primarily macroeconomics, with the emphasis on the economic thought process. Discussion of money and banking, national income, fiscal measures, and stabilizing the economy are all included.