

Iowa Western Community College Lewis Central High School Career Pathway Articulations





Lewis Central High School

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Lewis Central High School and Iowa Western Community College are partnering to expand opportunities to students at LCHS in the areas of Career and Technical Education for the 2019-2020 school year. We know that there is a high demand not only in our area, but also in the nation, for workers in the trades and other related career fields, and we want to make every effort to support our students in their preparation for their career goals.

This partnership is an expansion of the LCHS Fast Forward! initiative. Fast Forward! is our goal to have 95% or more of our graduates have plans to attend a 4-year college, 2-year college, trade school, vocational school, apprenticeship, or branch of the military to reach their career goal.

The College Readiness course focuses on post-secondary education, so students will explore and thoroughly plan and prepare for life after high school. Students will begin the reflective process of questioning, searching, and classifying the best post-secondary options for themselves. Students will participate in every phase of college preparation and planning, including researching and matching with institutions that will prepare them for their chosen career areas. This will include writing personal statements, how to submit college application and financial aid forms, applying for scholarships, and exploring careers and other post-secondary options. In addition, the course also focuses on strategies to equip students with skills to improve their scores on college entrance exams.

The Workplace Readiness course is designed to prepare students in the many skills involved in pursuing a degree at a community college, in a trade program, through an apprenticeship, in the military, or getting and keeping a job. Some of the topics include teamwork, problem solving, self-management, career exploration/planning, self-assessment, resume writing, and job interviewing. Students will build an employment portfolio.

This handbook highlights the articulated career pathways for Lewis Central students. Please work with your school counselor to register for these opportunities.

Proud to be a Titan!

Joel Beyenhof

Principal

Student Participation Requirements

Students are eligible their senior year, if they have met the following:

- Completion of 48 or more credit hour prior to the start of the student's senior year
- Completion of prerequisite courses identified in the articulations with a grade of C or better
- On track to graduate (includes total credits and required graduation course credits)

Career Pathway Articulations

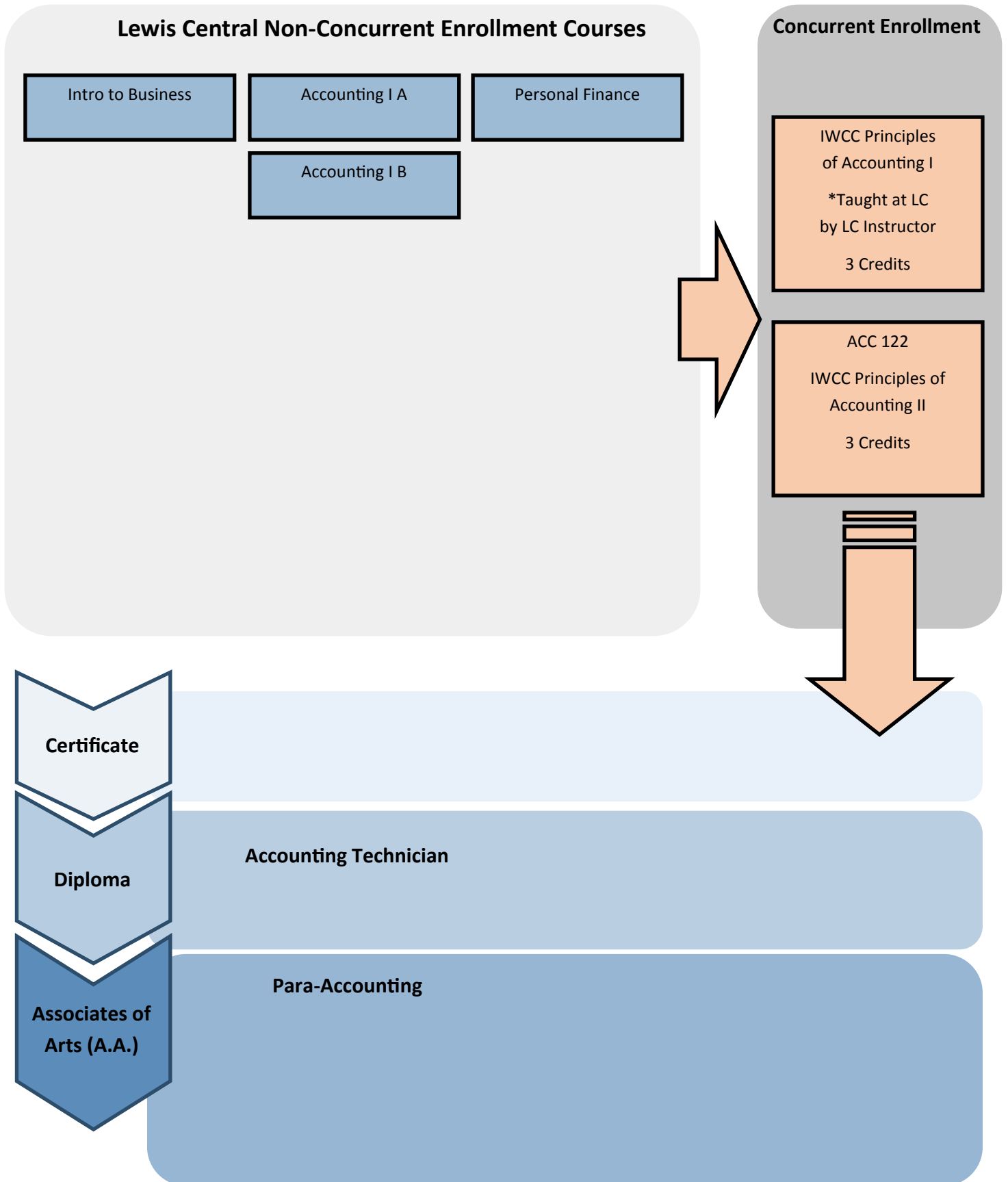
- Accounting
- Advanced Nursing Assistant
- Automotive Technology
- CNC Machining
- Construction
- Culinary Arts
- Electrical Technology
- Industrial Engineering Technology
- Information Technology
- Marketing
- Media Studies
- Welding

IWCC Course and Program Information

- Iowa Western Community College Program Descriptions
- Iowa Western Community College Course Catalog
 - <https://www.iwcc.edu/catalog.pdf>

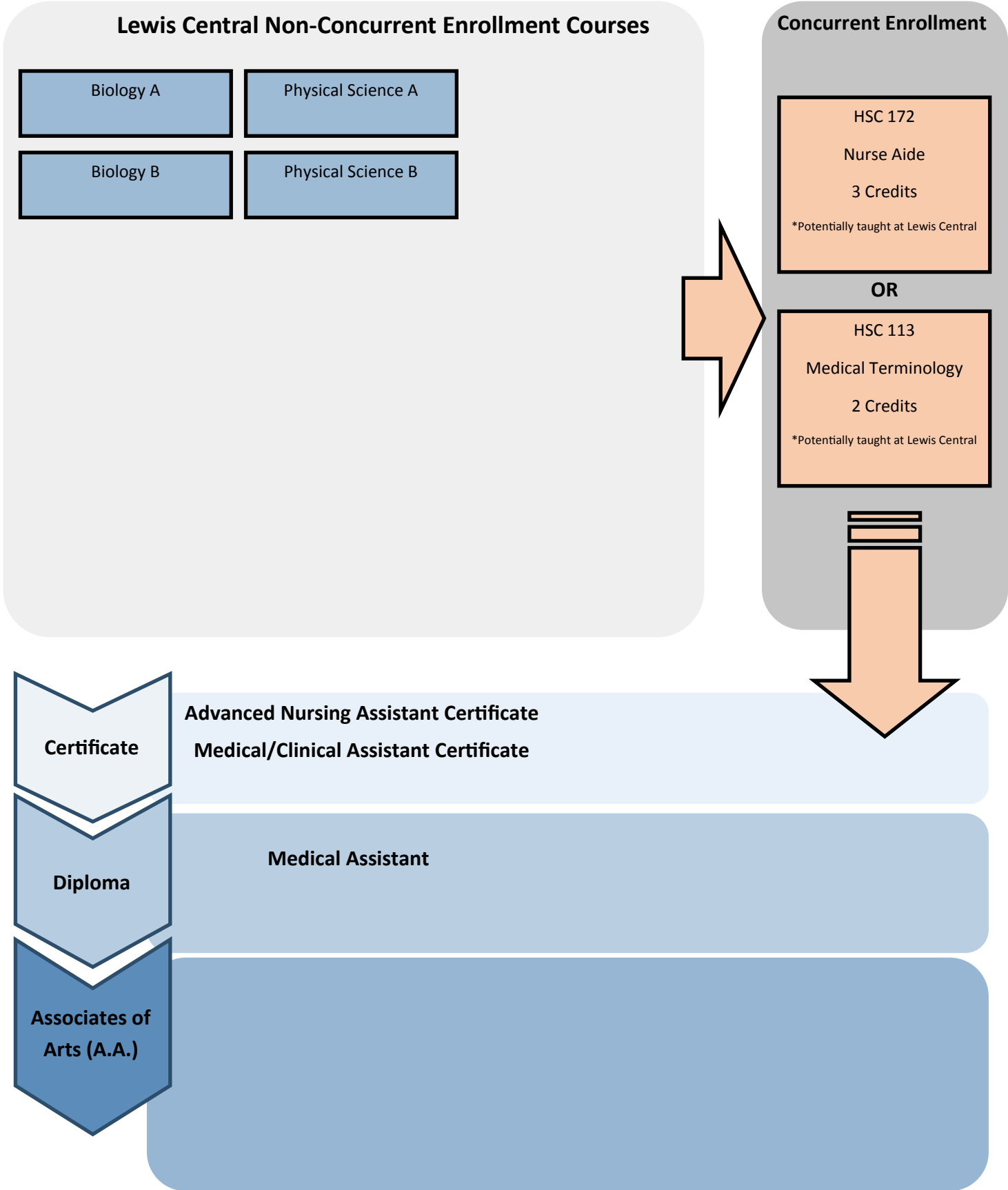
Service Area: Business, Finance, Marketing, and Management

Program: Accounting



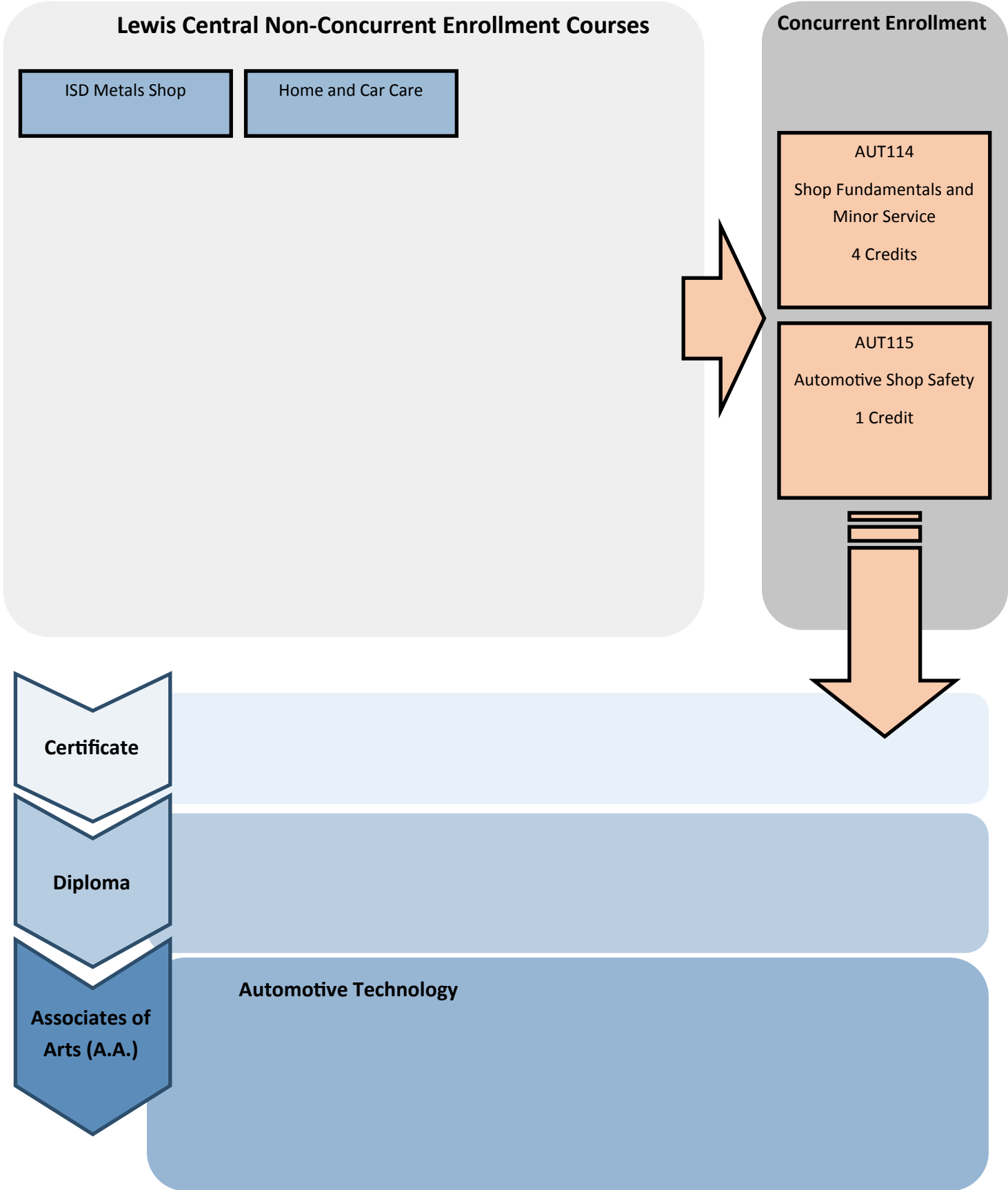
Service Area: Health Sciences

Program: Advanced Nursing Assistant



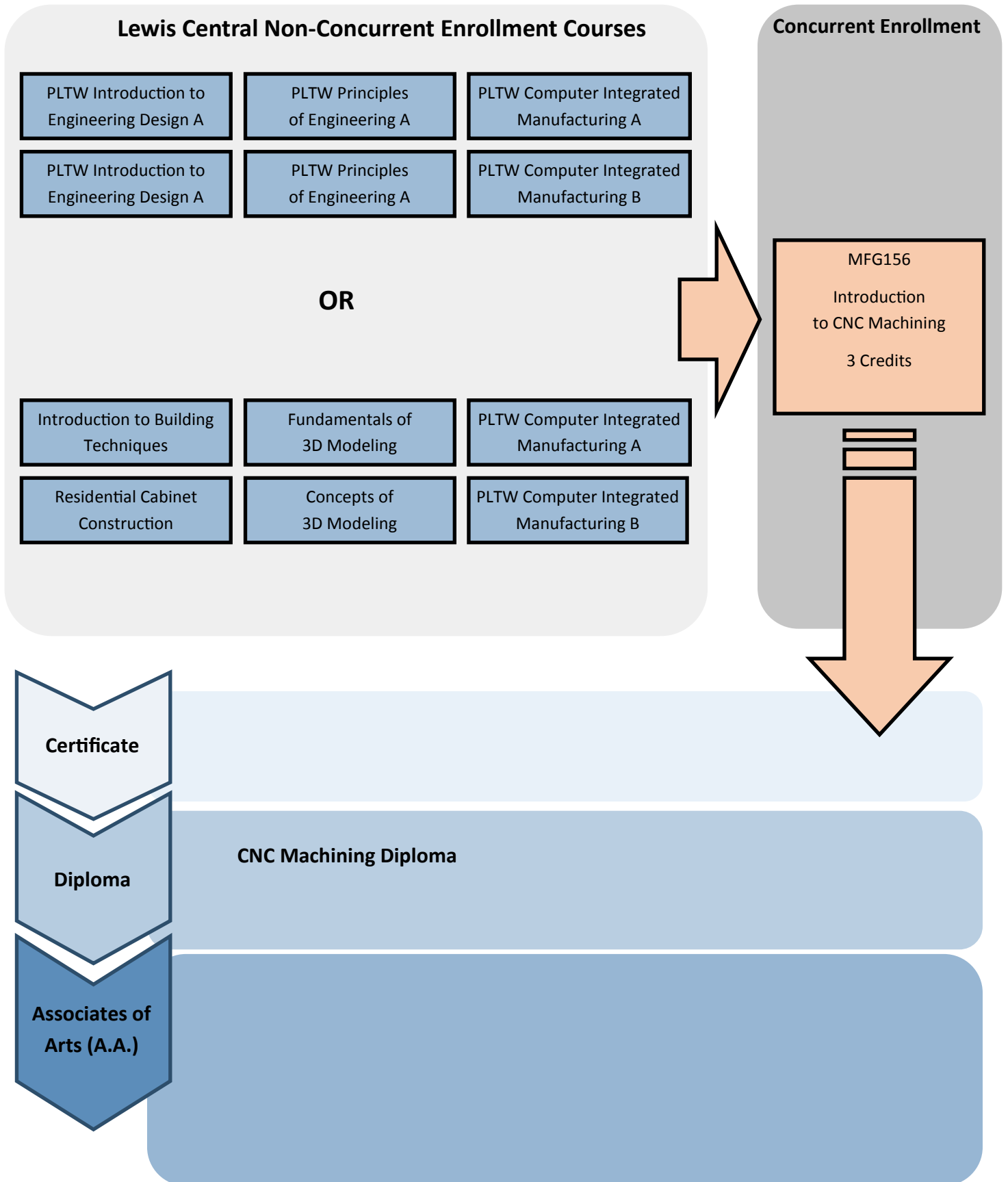
Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: Automotive Technology



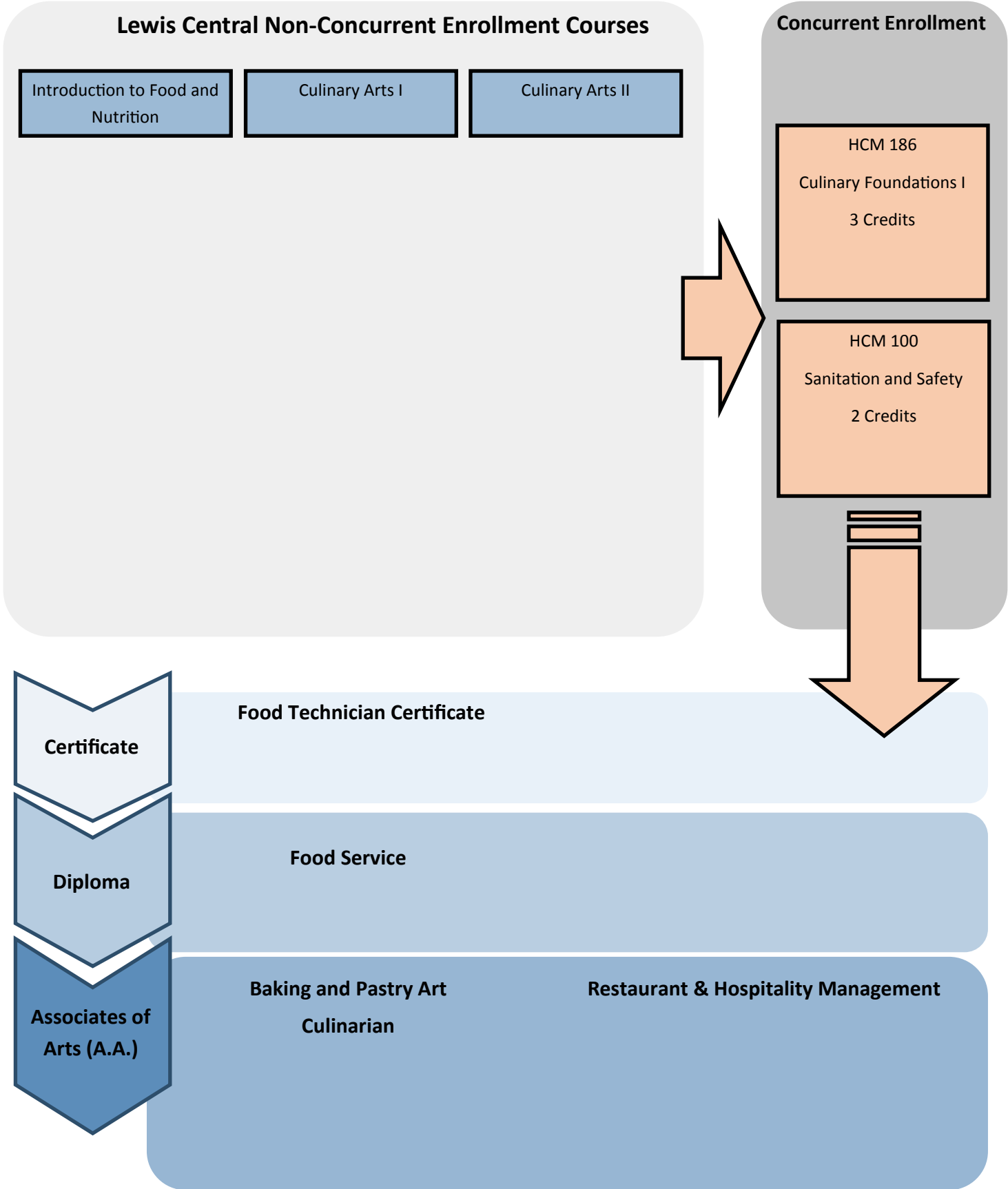
Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: CNC Machining



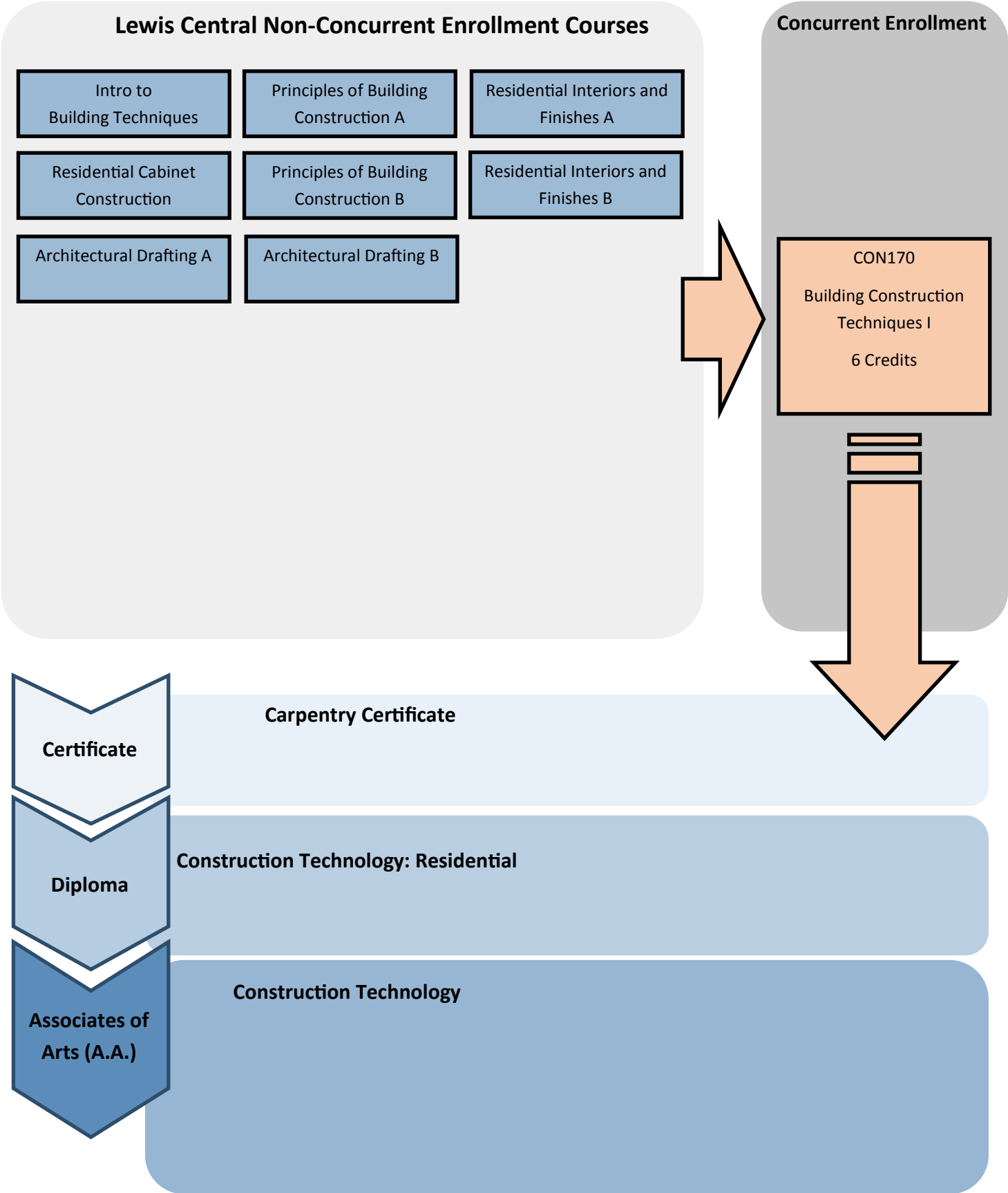
Service Area: Human Services

Program: Culinary Arts



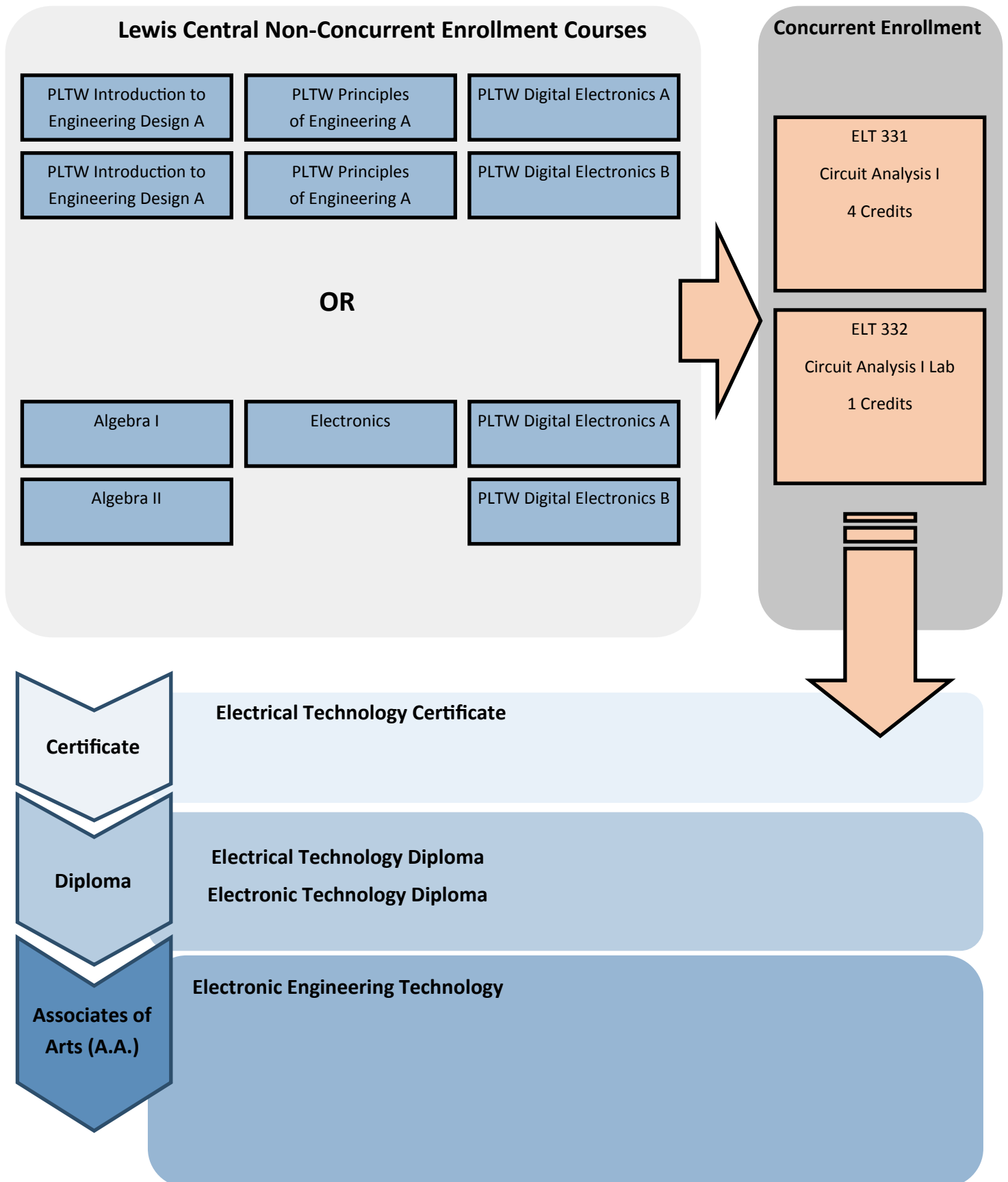
Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: Construction



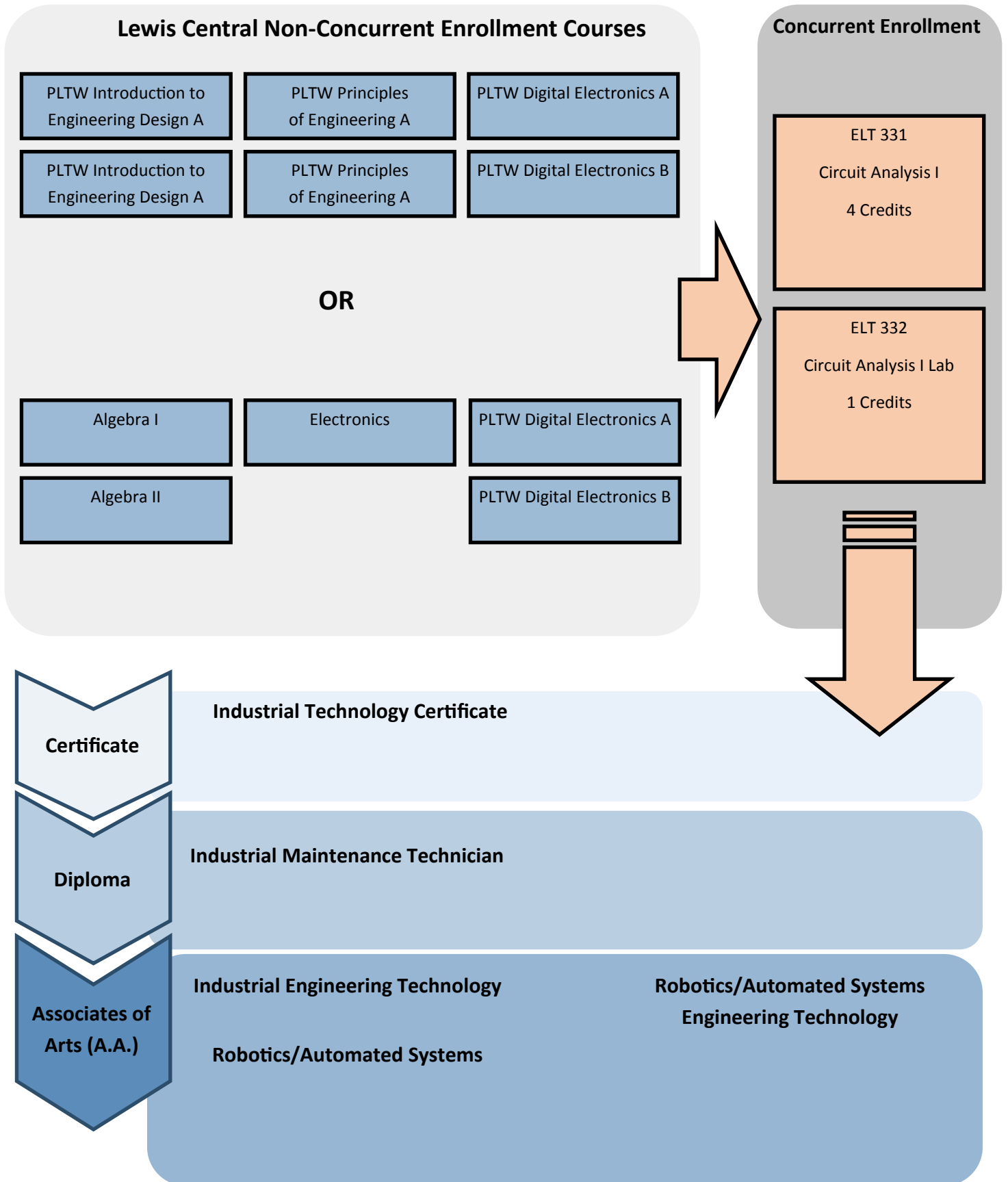
Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: Electrical Technology



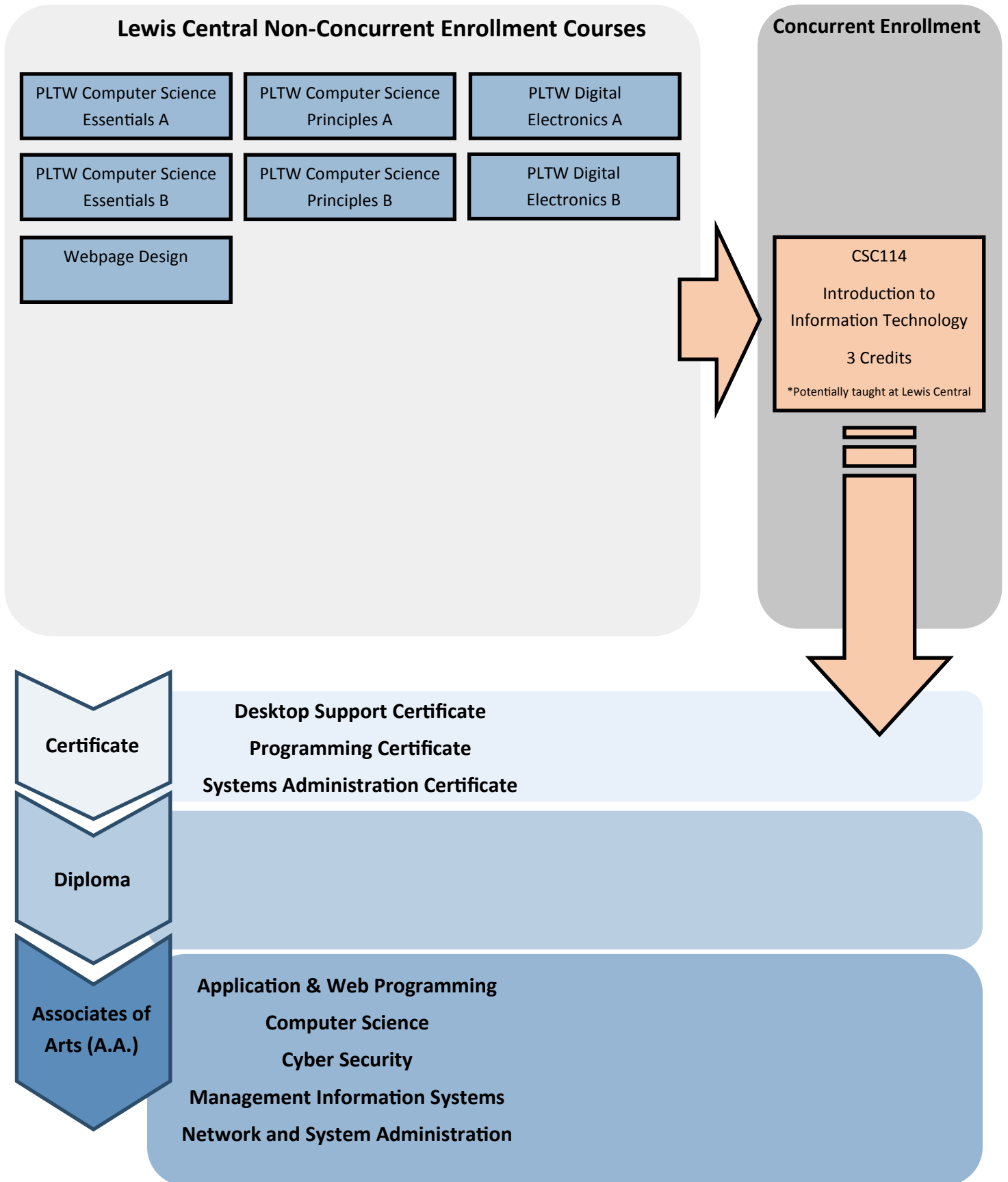
Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: Industrial Engineering Technology



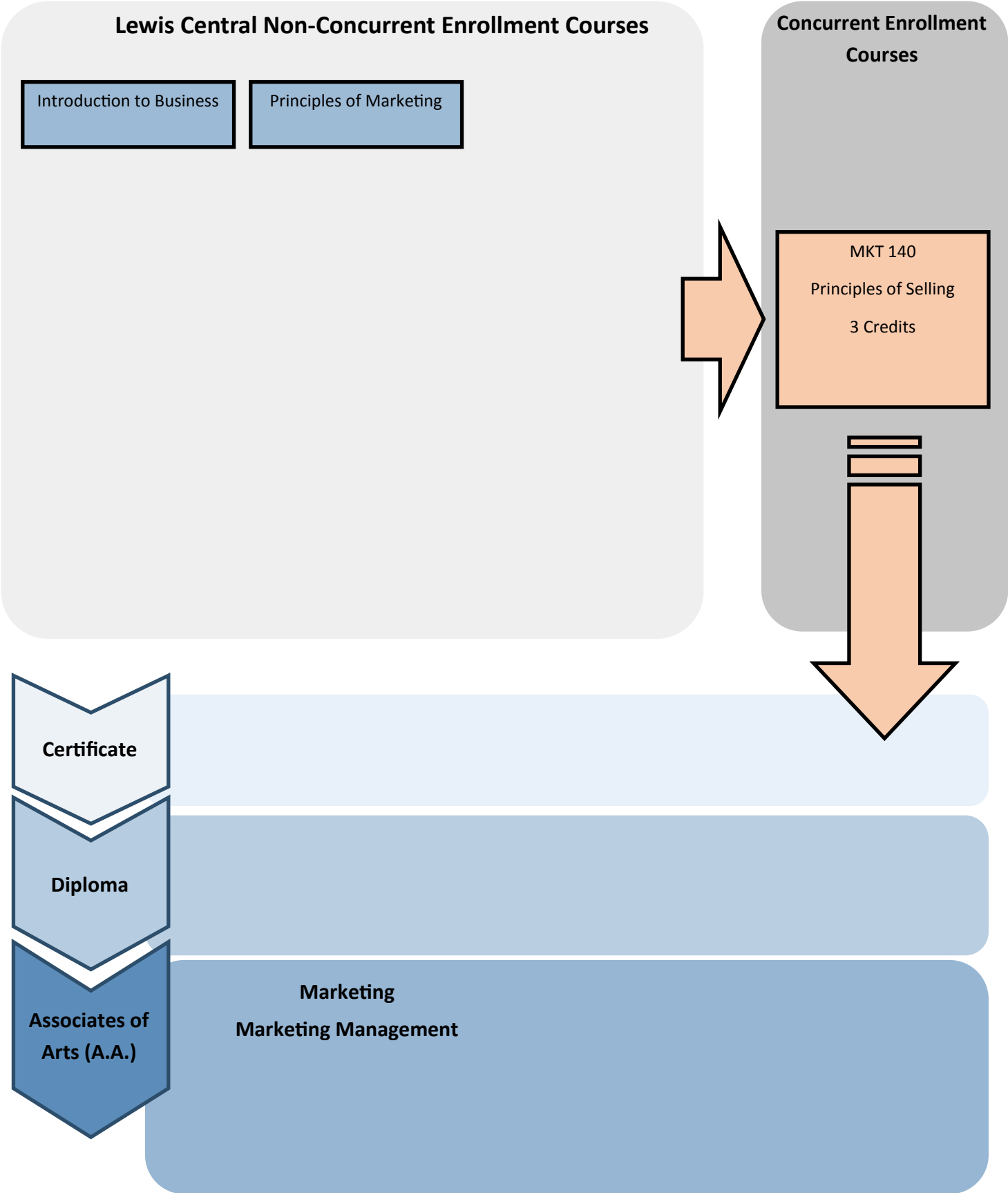
Service Area: Arts, Communications, and Information Systems

Program: Information Technology



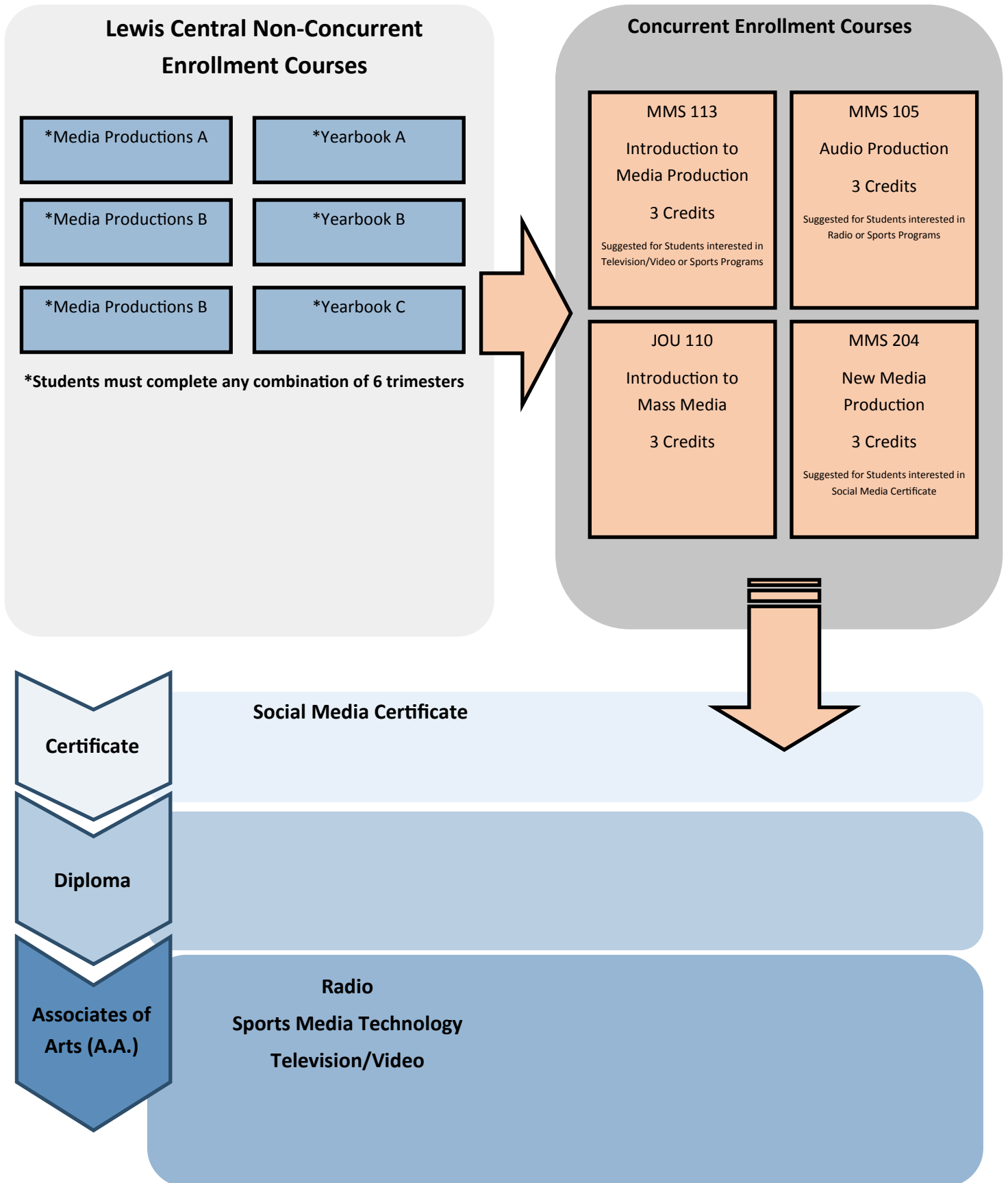
Service Area: Business, Finance, Marketing, and Management

Program: Marketing



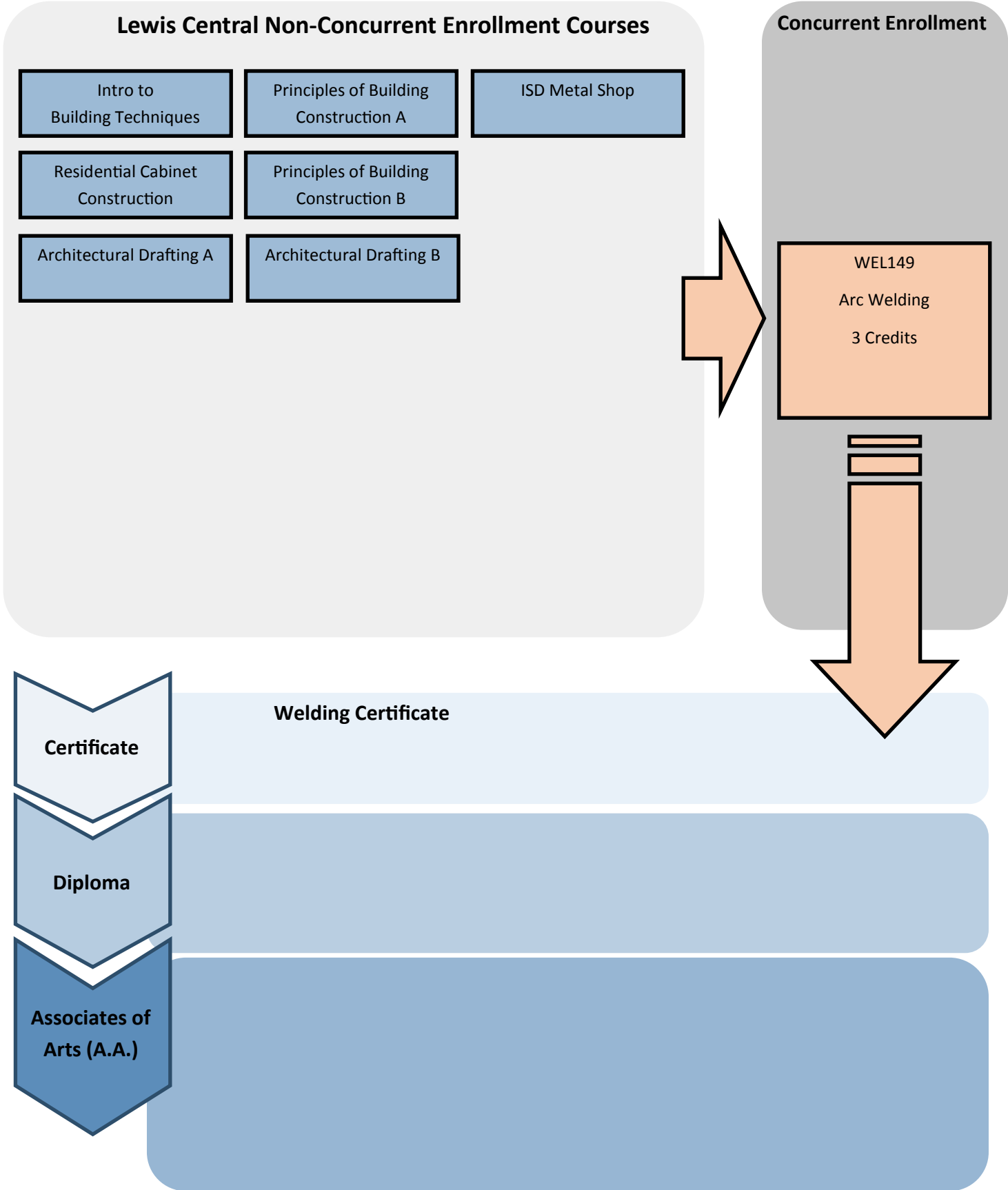
Service Area: Arts, Communications, and Information Systems

Program: Media Studies



Service Area: Applied Sciences, Technology, Engineering, and Manufacturing

Program: Welding



Accounting Technician

The Accounting Technician program of study prepares students for a career in accounting as a general ledger, accounts payable, accounts receivable or payroll clerk. The program is built on a solid base of accounting theory and includes specialized courses in computer operations. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ACC 121	Principles of Accounting I		3.0
BCA 212	Introduction to Computer Business Applications OR		
CSC 110	Introduction to Computers		3.0
BUS 102	Introduction to Business		3.0
MAT 711	Business and Financial Mathematics		3.0
ENG 105	Composition I		3.0
	Credits		15.0

Second Semester

ACC 122	Principles of Accounting II		3.0
ACC 161	Payroll Accounting		3.0
ACC 311	Computer Accounting		3.0
FIN 121	Personal Finance		3.0
SPC 122	Interpersonal Communication OR		
SPC 112	Public Speaking		3.0
BCA 142	Spreadsheets OR		
BCA 152	Comprehensive Spreadsheets		3.0
	Credits		18.0

Summer

MGT 195	Workplace Empowerment		3.0
	Credits		3.0

36.0 Total Semester Hours Required

**May substitute with MAT 121-227.

Accounting: Para-Accounting

The Para-Accounting program of study prepares students for a career in the field of accounting. Upon graduation, students are able to analyze, communicate, distinguish, record and summarize economic events for a profit-oriented and/or not-for-profit business entity. Fluency in oral and written communication is stressed. The program offers advanced accounting computer courses allowing students to seek advanced level employment in government offices, public accounting firms and general businesses. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ACC 121	Principles of Accounting I		3.0
CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
BUS 102	Introduction to Business		3.0
MAT 711	Business and Financial Mathematics **		3.0
ENG 105	Composition I		3.0
	Credits		15.0

Second Semester

ACC 122	Principles of Accounting II		3.0
ACC 161	Payroll Accounting		3.0
ACC 311	Computer Accounting		3.0
FIN 121	Personal Finance		3.0
SPC 122	Interpersonal Communication OR		
SPC 112	Public Speaking		3.0
BCA 142	Spreadsheets OR		
BCA 152	Comprehensive Spreadsheets		3.0
	Credits		18.0

Summer

MGT 195	Workplace Empowerment		3.0
	Credits		3.0

Third Semester

ACC 221	Cost Accounting		3.0
ACC 261	Income Tax Accounting		3.0
PHI 142	Ethics in Business OR		
PHI 105	Introduction to Ethics		3.0
ACC 932	Internship		2.0
BUS 121	Business Communications		3.0
	General Elective		3.0
	Credits		17.0

Fourth Semester

ACC 211	Intermediate Accounting I		3.0
BUS 185	Business Law I		3.0
ACC 251	Governmental and Nonprofit Accounting		3.0
ECN 120	Principles of Macroeconomics OR		
ECN 130	Principles of Microeconomics		3.0
ACC 932	Internship		2.0
	General Elective		3.0
	Credits		17.0

70.0 Total Semester Hours Required

**May substitute with MAT 121-227.

Audio Engineering

The Audio Engineering program of study is designed to prepare students for a wide variety of opportunities in the music industry and media production. This program is designed as a two-year terminal degree with no option to transfer to a four-year university. Graduates can go on to become live audio engineers, own and operate their own studio as recording and mixing engineers, or apply their music and audio skills to post-production for other media such as video, video games, and the web. Graduates of this degree are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MUS102	Music Fundamentals	3.0
MUS305	Introduction to Audio	3.0
MUS306	Digital Audio Production I	3.0
MUS320	Technical Music Practicum I	1.0
ENG110	Writing For The Workplace OR	
ENG105	Composition I	3.0
MAT711	Business and Financial Mathematics	3.0
	Credits	16.0

Second Semester

MUS307	Digital Audio Production II	3.0
MUS325	Mix Listening I	3.0
MUS328	Virtual Instrument and Processing Plug-Ins	3.0
MUS310	Recording Project I	1.0
MUS321	Technical Music Practicum II	1.0
MKT110	Principles of Marketing	3.0
	Credits	14.0

Third Semester

MUS311	Recording Project II	1.0
MUS326	Mix Listening II	3.0
MUS330	Audio Mixing I	3.0
MUS333	Popular Music Analysis	3.0
MUS322	Technical Music Practicum III	1.0
BCA155	Introduction to Web Design	3.0
BUS130	Introduction to Entrepreneurship	3.0
	Credits	17.0

Fourth Semester

MUS312	Recording Project III	1.0
MUS331	Audio Mixing II	3.0
MUS335	Audio Mastering	3.0
MUS323	Technical Music Practicum IV	1.0
MUS935	Technical Music Internship	3.0
MGT195	Workplace Empowerment	3.0
	Social Science Elective	3.0
	Credits	17.0

64.0 Total Semester Hours Required

Automotive Maintenance and Light Repair

The Automotive Maintenance and Light Repair program of study is a one-year program admitting students in the spring and fall semesters. Students in this program can expect to find greater than average opportunities for employment in all types of automotive service facilities. A combination of theory classes, hands-on training in the lab and shop, and industry relevant on-line training prepare students to become entry-level vehicle maintenance and light repair technicians. Graduates of this program are awarded a diploma. The Iowa Western Automotive Technology program is nationally Accredited by N.A.T.E.F. (National Automotive Technicians Education Foundation) and A.S.E. (Automotive Service Excellence), 13505 Dulles Technology Dr., Suite 2, Herndon, VA 20171-3421. The program is locally endorsed by the Lake Manawa Auto Dealers Association.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AUT115	Automotive Shop Safety	1.0
AUT114	Shop Fundamentals and Minor Service	4.0
AUT615	Automotive Electricity/Electronics	4.0
AUT404	Automotive Suspension and Steering	4.0
AUT918	Automotive Lab I	1.5
MAT743	Technical Math *	3.0
	Credits	17.5

Second Semester

AUT652	Advanced Automotive Electricity	3.0
AUT155	Automotive Engine Design and Systems	2.0
AUT919	Automotive Lab II	1.5
AUT524	Automotive Brake Systems and Service	4.0
AUT222	Basic Automotive Drive Lines	2.0
AUT878	Automotive Lab III	1.5
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	17.0

Summer

AUT190	Hybrid Fundamentals	2.0
AUT704	Automotive Heating and Air Conditioning	4.0
AUT920	Automotive Lab IV	1.5
	Credits	7.5

42.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Automotive Technology

The Automotive Technology program of study is designed to prepare students to become proficient, entry-level automotive technicians. Students desiring to enter this high-tech profession can take advantage of the training offered in all eight of the A.S.E. certification areas to acquire the skills needed to succeed. Instruction includes a wide variety of theory classes and up-to-date practical experience as well as on-line training comparable to many manufacturer training programs. Graduates of this program are awarded an Associate in Applied Science (A.A.S.) degree. The Iowa Western Automotive Technology program is nationally Accredited by the National Automotive Technicians Education Foundation (NATEF) and Automotive Service Excellence (ASE), 13505 Dulles Technology Dr., Suite 2, Herndon, VA 20171-3421. The program is locally endorsed by the Lake Manawa Auto Dealers Association

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AUT 115	Automotive Shop Safety	1.0
AUT 114	Shop Fundamentals and Minor Service	4.0
AUT 615	Automotive Electricity/Electronics	4.0
AUT 404	Automotive Suspension and Steering	4.0
AUT 918	Automotive Lab I	1.5
MAT 743	*Technical Math *	3.0
	Credits	17.5

Second Semester

AUT 652	Advanced Automotive Electricity	3.0
AUT 155	Automotive Engine Design and Systems	2.0
AUT 919	Automotive Lab II	1.5
AUT 524	Automotive Brake Systems and Service	4.0
AUT 222	Basic Automotive Drive Lines	2.0
AUT 878	Automotive Lab III	1.5
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	17.0

Summer

AUT 190	Hybrid Fundamentals	2.0
AUT 704	Automotive Heating and Air Conditioning	4.0
AUT 920	Automotive Lab IV	1.5
	Credits	7.5

Third Semester

AUT 842	Automotive Computerized Engine Controls	4.0
AUT 852	Automotive Engine Performance Diagnosis	4.0
AUT 921	Automotive Lab V OR	
AUT 901	Automotive Internship I	4.0
	Social Science/Humanities Elective	3.0
	Credits	15.0

Fourth Semester

AUT 163	Automotive Engine Repair	3.0
AUT 532	Advanced Brakes and Alignment	3.0
AUT 200	Automotive Automatic Transmissions/Transaxles	3.0
AUT 303	Automotive Manual Drive Train and Axles	3.0
AUT 922	Automotive Lab VI OR	
AUT 903	Automotive Internship II	4.0
MGT 195	Workplace Empowerment	3.0
	Credits	19.0

Summer

AUT 653	Advanced Automotive Systems	4.0
AUT 923	Automotive Lab VII OR	
AUT 904	Automotive Internship III	2.0
	Credits	6.0

82.0 Total Semester Hours Required

*May substitute MAT 102 or higher.

Aviation Maintenance Tech: Airframe Certificate

The Aviation Maintenance Technology Airframe Certificate is for those individuals who already hold a current and effective Federal Aviation Administration (FAA) issued Powerplant Mechanic License or who have taken and passed the FAA General Subject Areas per 14 Code of Federal Regulations 147 Appendix B at an FAA approved aviation maintenance technician school. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

AVM 181	Aviation Airframe I	7.5
AVM 182	Aviation Airframe II	7.5
AVM 185	Aviation Airframe III	7.0
AVM 186	Aviation Airframe IV	7.0
	Credits	29.0

29.0 Total Semester Hours Required

Chemistry

The Chemistry program of study encompasses the first two years of a university chemistry major. Chemists are in demand worldwide in technological fields, including plastics, medicine, pharmacology, vaccines, recombinant DNA, and other related areas. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
CHM 166	*General Chemistry I		5.0
MAT 211	*Calculus I		5.0
	Social Science Elective		3.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
CHM 176	*General Chemistry II		5.0
MAT 217	*Calculus II		5.0
	Humanities Elective		3.0
	Credits		16.0

Third Semester

SPC 112	Public Speaking		3.0
CHM 263	*Organic Chemistry I		5.0
PHY 210	*Classical Physics I		4.0
PHY 211	*Classical Physics I Lab		1.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

CHM 273	*Organic Chemistry II		5.0
PHY 220	*Classical Physics II		4.0
PHY 221	*Classical Physics II Lab		1.0
	Social Science/Humanities Elective		2.0
	Credits		12.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

CNC Machining Diploma

The CNC Machining Diploma program prepares students for an entry level position as a CNC machine operator or general machinist. Students program, set up, and operate a computer numerical control (CNC) machine, inspect parts, perform production runs and set up jobs. Students gain a strong foundation of blueprint reading, CAD and basic manual machining skills.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

IND 109	Equipment Safety and Operation		3.0
MAT 743	Technical Math		3.0
MFG 121	Machine Trade Printreading I		2.0
MFG 156	Introduction to CNC Machining		3.0
MFG 222	Machine Operations I		4.0
MFG 211	Basic Machine Theory		2.0
	Credits		17.0

Second Semester

EGT 167	Geometric Dimensioning and Tolerancing		3.0
CAD 139	Introduction to CAD/CAM		3.0
MFG 228	Machine Operations II		4.0
MFG 190	Metallurgy		2.0
MFG 359	CNC Programming and Operations		4.0
MFG 420	Jig and Fixture Design		2.0
	Credits		18.0

35.0 Total Semester Hours Required

Communication Studies

Communication Studies majors will learn about concepts and practices of human communication. Courses focus on communication within business and organizations and among people with diverse cultural backgrounds. This program prepares students for a variety of avenues within a business environment, or for transfer to a four-year program in business or communications. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	Psychology Elective		3.0
SPC 112	*Public Speaking		3.0
SPC 122	*Interpersonal Communication		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
SPC 120	*Intercultural Communications		3.0
	Sociology Elective		3.0
MGT 101	*Principles of Management OR		
BUS 102	*Introduction to Business OR		
MKT 110	*Principles of Marketing		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Third Semester

	General Elective **		3.0
BUS 121	*Business Communications		3.0
	Mathematics/Science Elective		3.0
SPC 160	*Voice and Diction		3.0
	Humanities Elective		3.0
	Credits		15.0

Fourth Semester

CSC 110	Introduction to Computers		3.0
HUM 287	Leadership Development Studies		3.0
PHI 142	Ethics in Business		3.0
	Social Science Elective		3.0
	General Elective **		1.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

**Recommended General Electives:

BCA 184 Comprehensive Web Page Design Software
3

BUS 154 E-business 3

GRA 137 Digital Design 3

JOU 110 Introduction to Mass Media 3

Computers: Application & Web Programming

The Application & Web Programming program of study prepares students for entry-level professional careers as programmers in the business world. Upon successful completion, students in this course of study are proficient in multiple programming languages, and World Wide Web technologies. Students gain experience in these languages while working hands-on with current technology and multiple computer environments. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

CSC 114	Introduction to Information Technology		3.0
CIS 207	Fundamentals of Web Programming		3.0
CIS 171	Java		3.0
CSC 121	Operating Systems		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		18.0

Second Semester

CIS 213	Advanced Client Side Scripting		3.0
CIS 134	Web Design		3.0
CIS 139	Programming I		3.0
NET 142	Network Essentials		3.0
CIS 332	Database and SQL		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

Third Semester

NET 612	Fundamentals of Network Security		3.0
CIS 227	Advanced Web Design		3.0
CIS 215	Server Side Web Programming		3.0
CIS 175	Java II		3.0
CIS 144	Programming II		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		18.0

Fourth Semester

CIS 780	Computer Projects OR		
NET 810	Computer Internship		6.0
CIS 151	Programming III		3.0
CIS 158	Web e-Business		3.0
CIS 187	ASP.NET MVC with C#		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

72.0 Total Semester Hours Required

Computers: Computer Science

The Computer Science program of study prepares students for transfer to four-year colleges and universities to complete undergraduate degrees. Students can choose one of four areas of concentration: Programming, Networking, Web Development, or E-Commerce. Students acquire credit in a broad base of general education courses and have the opportunity to obtain knowledge in information technology. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

CSC 110	*Introduction to Computers OR		
CSC 114	*Introduction to Information Technology		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
ENG 105	Composition I		3.0
	*CIT Concentration **		6.0
	Credits	15.0	16.0

Second Semester

	*CIT Concentration **		6.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Credits		15.0

Third Semester

	*CIT Concentration **		9.0
SPC 112	Public Speaking		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Distributed Requirement		3.0
	Mathematics/Science Elective		3.0
	Social Science Electives		6.0
	Humanities Electives		6.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

****Students must choose one of the four following areas of concentration and take all of the courses for that area of concentration:**

Programming

First Semester:

CIS 171 Java 3
CSC 121 Operating Systems 3

Second Semester:

CIS 332 Database and SQL 3
CIS 139 Programming I 3

Third Semester:

CIS 175 Java II 3
CIS 144 Programming II 3
NET 612 Fundamentals of Network Security 3

Systems

First Semester:

CSC 121 Operating Systems 3
NET 785 Fundamentals of Desktop Support 3

Second Semester:

NET 142 Network Essentials 3
NET 313 Windows Server 3

Third Semester:

CIS 127 Introduction to Programming 3
NET 343 Windows Directory Services 3
NET 612 Fundamentals of Network Security 3

Web Development

First Semester:

CIS 127 Introduction to Programming 3
CIS 207 Fundamentals of Web Programming 3

Second Semester:

CIS 134 Web Design 3
CIS 332 Database and SQL 3
CIS 213 Advanced Client Side Scripting 3

Third Semester:

CIS 227 Advanced Web Design 3
CIS 215 Server Side Web Programming 3

e-Commerce

First Semester:

BUS 130 Introduction to Entrepreneurship 3
CIS 207 Fundamentals of Web Programming 3

Second Semester:

CIS 134 Web Design 3
BUS 154 E-Business 3

Third Semester:

ACC 121 Principles of Accounting I 3
MGT 101 Principles of Management 3
MKT 110 Principles of Marketing 3

Computers: Cyber Security

The Cyber Security program of study prepared students to transfer to a four-year cyber security or information assurance program. Students will learn security fundamentals in programming, systems and networking courses. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
CIS 171	*Java		3.0
CSC 114	*Introduction to Information Technology		3.0
CSC 121	*Operating Systems		3.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
	Humanities Electives		6.0
NET 418	*LINUX Administration		3.0
NET 142	*Network Essentials		3.0
	Social Science Elective		3.0
	Credits		18.0

Third Semester

SPC 112	Public Speaking		3.0
CIS 175	*Java II		3.0
NET 612	*Fundamentals of Network Security		3.0
	Humanities Elective		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Mathematics/Science Elective		3.0
CRJ 100	*Introduction to Criminal Justice		3.0
	Distributed Requirement		3.0
	Social Science Electives		6.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Computers: Desktop Support Certificate

The Desktop Support Certificate program of study prepares students for careers in support of computer users. Students are able to install and manage computer hardware and operating systems. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

SPC 122	Interpersonal Communication		3.0
CSC 114	Introduction to Information Technology		3.0
NET 790	PC Support I		3.0
NET 785	Fundamentals of Desktop Support		3.0
CSC 121	Operating Systems		3.0
NET 795	Desktop Support Practicum		1.0
	Credits		16.0

16.0 Total Semester Hours Required

Students must earn a "C" or higher in all required courses in order to graduate.

Computers: Management Information Systems

The Computer Science Management Information Systems program of study prepares students to integrate computer technology with business practices and management skills. Students will acquire knowledge of business functions, information technology processes, decision-making skills, and management skills. Students will grow and develop into professionals who can apply information technology tools to the spectrum of business issues. Students acquire credit in a broad base of general education courses and have the opportunity to obtain knowledge in information technology. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
CIS 127	*Introduction to Programming		3.0
CSC 114	*Introduction to Information Technology		3.0
CIS 207	*Fundamentals of Web Programming		3.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
	Humanities Elective		3.0
CIS 134	*Web Design		3.0
NET 142	*Network Essentials		3.0
CIS 332	*Database and SQL		3.0
	Credits		15.0

Third Semester

SPC 112	Public Speaking		3.0
BUS 102	*Introduction to Business OR		
BUS 154	*E-business		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Mathematics/Science Elective		3.0
ACC 121	*Principles of Accounting I		3.0
	Humanities Elective		3.0
	Distributed Requirement		3.0
	Social Science Elective		6.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Computers: Network and System Administration

The Network and System Administration program of study provides students with the necessary training to install, maintain and administer network operating systems. Students learn current network technologies used to connect, route, and secure network traffic. Students also become proficient with installing and maintaining hardware and software for servers and desktops. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

SPC 122	Interpersonal Communication		3.0
CSC 114	Introduction to Information Technology		3.0
NET 790	PC Support I		3.0
NET 785	Fundamentals of Desktop Support		3.0
CSC 121	Operating Systems		3.0
NET 795	Desktop Support Practicum		1.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		19.0

Second Semester

CIS332	Database and SQL		3.0
NET 213	Cisco Networking		3.0
NET 313	Windows Server		3.0
NET 418	LINUX Administration		3.0
NET 478	Information Storage and Management		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

Third Semester

NET 495	Virtual Infrastructure		3.0
NET 225	Routing & Switching Essentials		3.0
NET 343	Windows Directory Services		3.0
CIS 127	Introduction to Programming		3.0
NET 612	Fundamentals of Network Security		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

Fourth Semester

NET 226	Scaling Networks		3.0
NET 227	Connecting Networks		3.0
CIS 780	Computer Projects	3.0	6.0
NET 810	Computer Internship		6.0
MGT 195	Workplace Empowerment		3.0
	Credits	18.0	21.0

73.0 Total Semester Hours Required

Computers: Programming Certificate

The Programming Certificate program of study prepares students for entry-level professional careers as programmers in the business world. Upon successful completion, students in this course of study have a basic understanding of programming languages, and World Wide Web technologies. Students are introduced to programming languages while working hands-on with current technology and multiple computer environments. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

CSC 114	Introduction to Information Technology		3.0
CIS 207	Fundamentals of Web Programming		3.0
CIS 171	Java		3.0
CSC 121	Operating Systems		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		15.0

Second Semester

CIS 213	Advanced Client Side Scripting		3.0
CIS 134	Web Design		3.0
CIS 139	Programming I		3.0
NET 142	Network Essentials		3.0
CIS 332	Database and SQL		3.0
	Credits		15.0

30.0 Total Semester Hours Required

Students must earn a "C" or higher in all required courses in order to graduate.

Computers: System Administration Certificate

The System Administration Certificate program of study provides students documentation of proficiency with installing and maintaining hardware and software for servers and desktops. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

SPC 122	Interpersonal Communication	3.0
CSC 114	Introduction to Information Technology	3.0
NET 790	PC Support I	3.0
NET 785	Fundamentals of Desktop Support	3.0
CSC 121	Operating Systems	3.0
NET 795	Desktop Support Practicum	1.0
	Credits	16.0

Second Semester

CIS332	Database and SQL	3.0
NET 213	Cisco Networking	3.0
NET 313	Windows Server	3.0
NET 418	LINUX Administration	3.0
NET 478	Information Storage and Management	3.0
	Credits	15.0

31.0 Total Semester Hours Required

Students must earn a "C" or higher in all required courses in order to graduate.

Construction Technology

The Construction Technology program of study provides a basic knowledge of carpentry and related skills used in residential and commercial construction. Residential construction involves the building or remodeling of homes, apartments and similar structures. Commercial construction involves advanced skills in concrete, metal building construction, advanced blueprint reading, and commercial interior/exterior wall finishes. The program provides the opportunity to learn and apply all phases of the industry with emphasis on carpentry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MAT 743	Technical Math **	3.0
CON 114	Residential Print Reading	3.0
CON 180	Principles of Building Construction I	3.0
CON 170	Building Construction Techniques I	6.0
ENG 110	Writing For The Workplace OR	
ENG 105	Composition I	3.0
	Credits	18.0

Second Semester

CON 244	Related Trade Applications	3.0
CON 181	Principles of Building Construction II	3.0
CON 171	Building Construction Techniques II	6.0
MGT 195	Workplace Empowerment	3.0
CON 118	Introduction to Sustainable Construction	3.0
	Credits	18.0

Summer

CON 425	Internship	4.0
	Credits	4.0

Third Semester

CON 250	Principles of Commercial Construction I	3.0
CON 251	Commercial Construction Techniques I	6.0
CON 115	Commercial Print Reading	3.0
CON 325	Estimating	3.0
	Social Science Elective	3.0
	Credits	18.0

Fourth Semester

CON 253	Principles of Commercial Construction II	3.0
CON 254	Commercial Construction Techniques II	6.0
CON 348	Supervision and Leadership in Building Construction	3.0
WEL 149	Arc Welding	3.0
CON 119	Construction Materials and Inspection	3.0
	Credits	18.0

76.0 Total Semester Hours Required

**May substitute with MAT 102 or higher.

Construction Technology: Carpentry Certificate

The Construction Technology: Carpentry Certificate program of study prepares students for entry level jobs in the residential construction industry. This certificate program will expose students to carpentry theory, techniques, and building materials. Students receive safety training and complete the 10-hour OSHA and EPA training. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MAT 743	Technical Math *		3.0
CON 114	Residential Print Reading		3.0
CON 180	Principles of Building Construction I		3.0
CON 170	Building Construction Techniques I		6.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

18.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Construction Technology: Residential

The Residential Construction Technology program of study provides a basic knowledge of carpentry and related skills used in the residential construction industry. Residential construction involves the building or remodeling of homes, apartments and similar structures. The program provides the opportunity to learn and apply all phases of the industry with emphasis on carpentry and the related areas of electricity, HVAC, blueprint reading, and math. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MAT 743	Technical Math *		3.0
CON 114	Residential Print Reading		3.0
CON 180	Principles of Building Construction I		3.0
CON 170	Building Construction Techniques I		6.0
ENG 110	Writing For The Workplace OR		
ENG 105	Composition I		3.0
	Credits		18.0

Second Semester

CON 244	Related Trade Applications		3.0
CON 181	Principles of Building Construction II		3.0
CON 171	Building Construction Techniques II		6.0
MGT 195	Workplace Empowerment		3.0
CON 118	Introduction to Sustainable Construction		3.0
	Credits		18.0

Summer

CON 425	Internship		4.0
	Credits		4.0

40.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Criminal Justice

The Criminal Justice program of study is designed to provide students with the background necessary to enter the justice field and/or to continue their education at a four-year institution upon graduation. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
CRJ 100	*Introduction to Criminal Justice		3.0
CRJ 111	*Police and Society		3.0
SPC 112	Public Speaking		3.0
	Social Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
CRJ 120	*Introduction to Corrections		3.0
CRJ 133	*Constitutional Criminal Procedure		3.0
	Humanities Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Third Semester

CRJ 130	*Criminal Law		3.0
CRJ 258	*Ethical Issues in Criminal Justice		3.0
	Distributed Requirement **		3.0
	Lab Science Requirement		4.0
	Social Science Elective **		3.0
	Credits		16.0

Fourth Semester

	Humanities Electives		6.0
	Mathematics/Science Elective		3.0
	General Electives **		6.0
	Social Science Elective **		3.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Social Science, Distributed and General Electives:

CRJ 160 Introduction to Forensic Investigation 3
 CRJ 240 Criminal Investigation 3
 CRJ 290 Criminal Justice Cooperative Education 3
 HIS 151 United States History to 1877 3
 POL 111 American National Government 3
 POL 201 The United States Constitution 3
 PSY 111 Introduction to Psychology 3
 PSY 241 Abnormal Psychology 3
 SOC 110 Introduction to Sociology 3
 SOC 200 Minority Group Relations 3
 SOC 230 Juvenile Delinquency 3
 SOC 235 Gangs 3
 SOC 240 Criminology 3

Culinary Arts: Baking and Pastry Art

The Culinary Arts program of study, Baking and Pastry Art prepares students for a challenging career in the bake shop. The curriculum emphasizes fundamental techniques in culinary arts, and baking. Students will be introduced to the techniques of producing artisan breads, classic pastries, pies, tarts and petit fours, celebration cakes, confections and showpieces. Throughout the program students will develop professionalism and proficiency in preparation procedures, production methods and presentation techniques of pastries, baked goods and desserts, as well as related instruction in cost controls, food handling safety, purchasing, menu planning, dining service, and nutrition and wellness. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCM 186	Culinary Foundations I		3.0
HCM 111	Principles of Baking I		2.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 113	Culinary Baking		1.0
HCM 100	Sanitation and Safety		2.0
HCM 200	Dining Service		2.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Second Semester

HCM 187	Culinary Foundations II		3.0
HCM 112	Principles of Baking II		2.0
HCM 192	Quantity Food Production II Lab		4.0
HCM 121	Culinary Baking II		1.0
	Social Science/Humanities Elective		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		16.0

Summer

HCM 517	Baking Internship		2.0
	Credits		2.0

Third Semester

HCM 240	Menu Planning and Design		2.0
HCM 230	Nutrition and Wellness		3.0
HCM 343	Recipe Costing and Menu Pricing		2.0
HCM 255	Purchasing		3.0
HCM 257	Advanced Baking I		3.0
HCM 267	Baking Science		2.0
	Advanced Baking Lab Electives **		4.0
	Credits		19.0

Fourth Semester

HCM 278	Cost Control		2.0
HCM 258	Advanced Baking II		3.0
HCM 273	Baking Seminar		1.0
HCM 330	Hospitality Personnel Management		3.0
HCM 525	Baking Capstone		1.0
	Advanced Baking Lab Electives **		4.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

71.0 Total Semester Hours Required

**Advanced Baking Lab electives must be selected from the following:

HCM 216 Pastries 1
 HCM 217 Artisan Breads 1
 HCM 218 Cakes 1
 HCM 219 International Breads 1
 HCM 220 Chocolate and Sugar 1
 HCM 221 Cake Decorating 1
 HCM 222 Convenience Food 1
 HCM 223 Laminated Doughs 1

Culinary Arts: Culinarian

The Culinary Arts program of study, Culinarian prepares students who enjoy working with food for a challenging career in all facets of the hospitality industry. The curriculum emphasizes fundamental and intermediate techniques in culinary skills and kitchen management. The curriculum enables students to develop supervisory skills as well as training to become a culinarian. Related instruction emphasizes supervision, cost controls, purchasing, nutrition and wellness, advanced culinary garde manger, advanced soups and sauces, and à la carte cookery principles. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCM 186	Culinary Foundations I	3.0
HCM 111	Principles of Baking I	2.0
HCM 191	Quantity Food Production I Lab	4.0
HCM 113	Culinary Baking	1.0
HCM 100	Sanitation and Safety	2.0
HCM 200	Dining Service	2.0
MAT 711	Business and Financial Mathematics	3.0
	Credits	17.0

Second Semester

HCM 187	Culinary Foundations II	3.0
HCM 112	Principles of Baking II	2.0
HCM 192	Quantity Food Production II Lab	4.0
HCM 121	Culinary Baking II	1.0
	Social Science/Humanities Elective	3.0
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	16.0

Summer

HCM 512	Culinary Internship	2.0
	Credits	2.0

Third Semester

HCM 240	Menu Planning and Design	2.0
HCM 230	Nutrition and Wellness	3.0
HCM 343	Recipe Costing and Menu Pricing	2.0
HCM 255	Purchasing	3.0
HCM 243	Soups and Sauces	1.0
HCM 244	Soups and Sauces Lab	2.0
HCM 246	Garde Manger/Charcuterie	1.0
HCM 247	Garde Manger/Charcuterie Lab	2.0
HCM 197	Regional Wine History	2.0
	Credits	18.0

Fourth Semester

HCM 176	World Cuisine	2.0
HCM 278	Cost Control	2.0
HCM 248	A la Carte Cooking	2.0
HCM 249	A la Carte Cooking Lab	4.0
HCM 330	Hospitality Personnel Management	3.0
HCM 532	Culinary Capstone	2.0
MGT 195	Workplace Empowerment	3.0
	Credits	18.0

71.0 Total Semester Hours Required

Culinary Arts: Food Service

The Food Service program of study prepares students for a challenging career in restaurant, hotel, motel, institutional, health care and private club facilities. The curriculum emphasizes fundamental and intermediate techniques of food preparation, production and baking skills. It enables students to develop culinary skills as they prepare for entry or intermediate positions in the industry. Related instruction emphasizes the use and selection of equipment, safety and sanitation, mathematical applications, meal service, product selection, and computer skills. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCM 186	Culinary Foundations I	3.0
HCM 111	Principles of Baking I	2.0
HCM 191	Quantity Food Production I Lab	4.0
HCM 113	Culinary Baking	1.0
HCM 100	Sanitation and Safety	2.0
HCM 200	Dining Service	2.0
MAT 711	Business and Financial Mathematics	3.0
	Credits	17.0

Second Semester

HCM 187	Culinary Foundations II	3.0
HCM 112	Principles of Baking II	2.0
HCM 192	Quantity Food Production II Lab	4.0
HCM 121	Culinary Baking II	1.0
MGT 195	Workplace Empowerment	3.0
	Communications Requirement (ENG 105 or 110)	3.0
	Credits	16.0

Summer

HCM 512	Culinary Internship OR	
HCM 517	Baking Internship	2.0
	Credits	2.0

35.0 Total Semester Hours Required

Culinary Arts: Food Technician Certificate

The Food Technician Certificate program of study prepares students for a challenging career in restaurant, hotel, motel, institutional, health care and private club facilities. The curriculum emphasizes the fundamental techniques of food preparation and production skills. It enables the students to develop culinary skills as they prepare for entry level positions in the industry. Related instruction emphasizes the use and selection of equipment, safety and sanitation, measurement math applications, and product selection. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

HCM 100	Sanitation and Safety		2.0
HCM 186	Culinary Foundations I		3.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 187	Culinary Foundations II		3.0
HCM 192	Quantity Food Production II Lab		4.0
	Credits		16.0

16.0 Total Semester Hours Required

Culinary Arts: Restaurant & Hospitality Management

The Culinary Arts program of study, Restaurant and Hospitality Management prepares students for a challenging career in all facets of the hospitality industry. The curriculum emphasizes fundamental techniques in culinary arts with an emphasis in restaurant and institutional management. The curriculum enables students to develop management, marketing, and supervisory skills emphasizing cost controls, nutrition and wellness, fine dining management, human relations and personnel. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

HCM 186	Culinary Foundations I		3.0
HCM 111	Principles of Baking I		2.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 113	Culinary Baking		1.0
HCM 100	Sanitation and Safety		2.0
HCM 200	Dining Service		2.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Second Semester

HCM 187	Culinary Foundations II		3.0
HCM 112	Principles of Baking II		2.0
HCM 192	Quantity Food Production II Lab		4.0
HCM 121	Culinary Baking II		1.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Summer

HCM 512	Culinary Internship		2.0
	Credits		2.0

Third Semester

HCM 240	Menu Planning and Design		2.0
HCM 230	Nutrition and Wellness		3.0
HCM 343	Recipe Costing and Menu Pricing		2.0
HCM 255	Purchasing		3.0
BUS 185	Business Law I		3.0
BUS 102	Introduction to Business		3.0
HCM 197	Regional Wine History		2.0
	Credits		18.0

Fourth Semester

HCM 278	Cost Control		2.0
HCM 245	Design and Layout of Food Service Facilities		3.0
HCM 330	Hospitality Personnel Management		3.0
HCM 214	Culinary Media/Networking		3.0
MKT 110	Principles of Marketing		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

70.0 Total Semester Hours Required

Design Technology

The Design Technology program prepares students to assist engineers in the design of products or the solution to problems utilizing computerized drawings for all types of machines and manufacturing industries. Coursework emphasizes the Product Lifecycle Management (PLM) model of industrial product management. Students will learn various CAD techniques as well as understanding various materials used in manufacturing. Students will earn an Associate of Applied Science degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
EGT 155	Engineering Drawing Practices		3.0
EGT 113	Introduction to PLM		3.0
EGT 171	Manufacturing Processes		3.0
CAD 129	CAD I		3.0
	Credits		15.0

Second Semester

MAT 129	Precalculus *		5.0
MGT 195	Workplace Empowerment		3.0
CAD 197	CAD 3D-NX		4.0
EGT 167	Geometric Dimensioning and Tolerancing		3.0
	Credits		15.0

Summer

CAD 933	Design Technology Internship		6.0
	Credits		6.0

Third Semester

SPC 122	Interpersonal Communication		3.0
EGT 176	Electric Power and Electronics		4.0
CAD 203	Principles of Design		3.0
CAD 238	Design Communications		3.0
EGT 153	Design Statics		3.0
	Credits		16.0

Fourth Semester

PHI 105	Introduction to Ethics		3.0
CAD 222	Advanced CAD 3D-NX		3.0
CAD 236	Design Problems		6.0
EGT 184	Strength of Materials		3.0
	Credits		15.0

67.0 Total Semester Hours Required

*May substitute with MAT 121 and MAT 130.

Diesel Mechanics

The Diesel Mechanics program of study equips students with necessary skills to become entry-level diesel mechanics. It emphasizes the maintenance of over-the-road diesel trucks. Students receive instruction through a combination of theory classes and practical experience. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

DSL 324	Introduction to Diesel		4.0
DSL 144	Electrical Systems		4.0
DSL 846	Diesel Lab I **		6.0
	General Elective		3.0
	Credits		17.0

Second Semester

DSL 654	Hydraulic/Air Brakes		4.0
DSL 674	Chassis/Driveline		4.0
DSL 856	Diesel Lab II **		6.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		17.0

Summer

DSL 742	Air Conditioning/Refrigeration		2.0
DSL 829	Preventative Maintenance		2.0
DSL 863	Diesel Lab III **		3.0
	Credits		7.0

41.0 Total Semester Hours Required

**Students must complete 15 semester credit hours of laboratory courses.

Diesel Technology

The Diesel Technology program of study prepares students to be proficient diesel truck technicians having skills to be competitive in the diesel truck maintenance industry. Students study all phases of the diesel truck including engines, transmissions, drive axles, electrical systems, and auxiliary systems. Instruction includes a wide variety of theory classes and up-to-date practical experiences. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

DSL 324	Introduction to Diesel		4.0
DSL 144	Electrical Systems		4.0
DSL 846	Diesel Lab I		6.0
MAT 743	Technical Math		3.0
	Credits		17.0

Second Semester

DSL 654	Hydraulic/Air Brakes		4.0
DSL 674	Chassis/Driveline		4.0
DSL 856	Diesel Lab II		6.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		17.0

Summer

DSL 742	Air Conditioning/Refrigeration		2.0
DSL 863	Diesel Lab III		3.0
DSL 829	Preventative Maintenance		2.0
	Credits		7.0

Third Semester

DSL 354	Engines I		4.0
DSL 444	Fuel Systems		4.0
DSL 876	Diesel Lab IV OR**		
DSL 883	Diesel Internship II		6.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

Fourth Semester

DSL 364	Engines II		4.0
DSL 544	Transmissions/Drive Axle		4.0
DSL 886	Diesel Lab V OR **		
DSL 883	Diesel Internship II **		6.0
	Social Science/Humanities Elective		3.0
	Credits		17.0

Summer

DSL 893	Diesel Lab VI OR **		
DSL 881	Diesel Internship I **		3.0
	Credits		3.0

78.0 Total Semester Hours Required

**Students must complete 30 credit hours of laboratory courses OR complete a minimum of 21 credit hours of laboratory courses and a maximum of 9 credit hours of internship, with any combination of laboratory and internship credit hours within that range being acceptable.

Early Childhood Education

The Early Childhood Education program of study is designed for students who wish to become early childhood teachers in birth through grade three classrooms. The curriculum provides students with a foundation in best practices with an emphasis in planning, leading, and evaluating learning experiences through observation, discussion and active participation. Students apply research and theory by demonstrating newly acquired skills in the Laboratory School. The program is designed for transfer to institutions that offer teacher certification. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ECE 103	*Introduction to Early Childhood Education		3.0
ECE 170	*Child Growth and Development		3.0
ECE 153	*Early Childhood Curriculum I with Lab		4.0
ECE 244	*Early Childhood Guidance with Lab		4.0
ENG 105	Composition I		3.0
	Credits		17.0

Second Semester

ECE 221	*Infant/Toddler Care and Education		3.0
ECE 133	*Child Health, Safety, and Nutrition		3.0
ECE 156	*Early Childhood Curriculum II with Lab		4.0
ENG 106	Composition II		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	16.0	17.0

Third Semester

PSY 111	Introduction to Psychology		3.0
HIS 151	U.S. History to 1877 OR		
HIS 152	U.S. History Since 1877		3.0
SPC 112	Public Speaking		3.0
LIT 110	American Literature to Mid 1800s		3.0
	Physical Science Elective		3.0
	Credits		15.0

Fourth Semester

POL 111	American National Government		3.0
PHI 101	Introduction to Philosophy		3.0
ENV 111	Environmental Science		4.0
ART 101	Art Appreciation OR		
MUS 100	Music Appreciation		3.0
	Distributed Requirement		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Early Childhood Studies

The Early Childhood Studies program of study prepares students to become lead teachers and child specialists in preschools, family child care homes, and Head Start programs. Students are involved in planning, leading and evaluating learning experiences through observation, discussion and active participation. Students culminate their educational experience with a field experience and practicum in a variety of early childhood settings. Students must maintain First Aid/CPR certification throughout the program. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ECE 244	Early Childhood Guidance with Lab	4.0
ECE 103	Introduction to Early Childhood Education	3.0
ECE 170	Child Growth and Development	3.0
ECE 153	Early Childhood Curriculum I with Lab	4.0
SPC 122	Interpersonal Communication	3.0
	Credits	17.0

Second Semester

ECE 120	Communication with Families	2.0
ECE 156	Early Childhood Curriculum II with Lab	4.0
ECE 221	Infant/Toddler Care and Education	3.0
ECE 125	School Age Care	2.0
ECE 133	Child Health, Safety, and Nutrition	3.0
ENG 105	Composition I	3.0
	Credits	17.0

Third Semester

EDU 235	Children's Literature	3.0
ECE 287	Exceptional Learner	3.0
ECE 268	Early Childhood Field Experience	4.0
ECE 290	Early Childhood Program Administration	3.0
MAT 157	Statistics	4.0
	Credits	17.0

Fourth Semester

ECE 258	Early Childhood Field Practicum	6.0
CSC 110	Introduction to Computers OR	
BCA 212	Introduction to Computer Business Applications	3.0
MGT 195	Workplace Empowerment	3.0
	Social Science Elective	3.0
	Credits	15.0

66.0 Total Semester Hours Required

Early Childhood Studies Diploma

The Early Childhood Diploma program of study is designed to provide students with a foundation in best practices with an emphasis in the development of the young child, planning activities and working with families. Students apply research and theory by demonstrating newly acquired skills in the Laboratory School. This program prepares students to be assistant preschool teachers and nannies. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ECE 244	Early Childhood Guidance with Lab	4.0
ECE 103	Introduction to Early Childhood Education	3.0
ECE 170	Child Growth and Development	3.0
ECE 153	Early Childhood Curriculum I with Lab	4.0
SPC 122	Interpersonal Communication	3.0
	Credits	17.0

Second Semester

ECE 120	Communication with Families	2.0
ECE 133	Child Health, Safety, and Nutrition	3.0
ECE 156	Early Childhood Curriculum II with Lab	4.0
ECE 221	Infant/Toddler Care and Education	3.0
ENG 110	Writing For The Workplace OR	
ENG 105	Composition I	3.0
	Credits	15.0

32.0 Total Semester Hours Required

Students must maintain First Aid/CPR certification throughout the program.

Early Childhood: Administration Certificate

The Early Childhood Administration Certificate program of study is designed for early childhood professionals who already have an AAS Degree and wish to pursue an administrative career. The certificate provides leadership and management skills necessary to successfully administer an early childhood program.

Prerequisite: An associate or higher academic degree to begin this certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

ECE 268	Early Childhood Field Experience		4.0
ECE 290	Early Childhood Program Administration		3.0
MGT 130	Principles of Supervision		3.0
ACC 111	Introduction to Accounting		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
BUS 130	Introduction to Entrepreneurship		3.0
	Credits		19.0

19.0 Total Semester Hours Required

Early Childhood: Child Development Certificate

The Child Development Certificate program of study prepares students for careers in the early childhood profession. Students become knowledgeable in career development; guidance and discipline; health, safety and nutrition; and curriculum planning. Graduates of this program are awarded a certificate. Upon completion of the certificate, students are eligible for CDA certification from the Council for Professional Recognition.

Students must complete the curriculum described below:

Recommended Course Sequence

ECE 103	Introduction to Early Childhood Education		3.0
ECE 244	Early Childhood Guidance with Lab		4.0
ECE 133	Child Health, Safety, and Nutrition		3.0
ECE 221	Infant/Toddler Care and Education		3.0
ECE 153	Early Childhood Curriculum I with Lab		4.0
	Credits		17.0

17.0 Total Semester Hours Required

Education: Grades K - 12

The Education: Grades K-12 program of study is designed for students who wish to become preschool, elementary or secondary teachers. The curriculum is structured so that students have the opportunity to explore the field of teaching. It is designed for transfer to institutions that offer teaching certificates. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
CSC 110	Introduction to Computers		3.0
PSY 111	Introduction to Psychology		3.0
EDU 210	*Foundations of Education		3.0
ECE 170	*Child Growth and Development OR **		
PSY 121	*Developmental Psychology		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
HIS 151	U.S. History to 1877 OR		
HIS 152	U.S. History Since 1877		3.0
SPC 112	Public Speaking		3.0
EDU 245	*Exceptional Learner		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Third Semester

BIO 105	Introductory Biology		4.0
LIT 110	American Literature to Mid 1800s OR		
LIT 140	British Literature I		3.0
EDU 240	Educational Psychology		3.0
	General Electives		4.0
	Distributed Requirement		3.0
	Credits		17.0

Fourth Semester

ENV 111	Environmental Science		4.0
POL 111	American National Government		3.0
EDU 235	*Children's Literature OR **		
PSY 224	*Adolescent Psychology		3.0
ART 101	Art Appreciation OR		
MUS 100	Music Appreciation		3.0
PHI 101	Introduction to Philosophy		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Elementary Education majors must take ECE 170 and EDU 235, and Secondary Education majors must take PSY 121 and PSY 224.

Electrical Technology Certificate

The Electrical Technology Certificate program provides students with the basic training essential for entry-level positions as an electrician in residential or commercial construction or industrial maintenance. Students are trained to understand the basic electrical theory, wiring and blueprint reading. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
ELE 126	Basics of Wiring		2.0
	Credits		7.0

Second Semester

ELE 179	Advanced Wiring Systems		5.0
ELE 106	Electrical Blueprint Reading		2.0
ELE 207	Residential Electrical Services		3.0
	Credits		10.0

17.0 Total Semester Hours Required

Electrical Technology Diploma

The Electrical Technology Diploma program provides students with the training essential for positions as an electrician in residential or commercial construction or industrial maintenance. The program provides training in advanced motor control, conduit installation and bending techniques, blueprint reading and wiring practices. Students are trained to install, replace, and repair electrical equipment and understand industry safety practices. This program is designed to meet the related technical instruction for some DOL apprenticeship programs. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
ELE 155	National Electrical Code I		2.0
ELE 126	Basics of Wiring		2.0
MAT 743	Technical Math		3.0
	Credits		17.0

Second Semester

ELE 179	Advanced Wiring Systems		5.0
ELE 106	Electrical Blueprint Reading		2.0
ELE 207	Residential Electrical Services		3.0
ELE 156	National Electrical Code II		2.0
ELE 180	Electrical Lighting Systems		2.0
SER 130	Introduction to Solar Energy		3.0
	Credits		17.0

34.0 Total Semester Hours Required

Electronic Engineering Technology

The Electronic Engineering Technology program of study prepares students for a technical level career in manufacturing, service and sales in four primary electronics fields: computers, telecommunications, bio-medical electronics, and industrial electronics. Students learn high technology theory in industrial electronics, microelectronics and optoelectronics in conjunction with associated laboratory assignments to assure practical knowledge. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
NET 790	PC Support I		3.0
	Technical Elective **		3.0
	Credits		16.0

Third Semester

ELT 252	Advanced Programmable Logic Controllers		3.0
ELT 253	Advanced Programmable Logic Controllers Lab		2.0
ELT 313	Digital Circuits I		4.0
ELT 523	Electronic Devices		4.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		19.0

Fourth Semester

ELT 432	Telecommunications		4.0
ELT 433	Telecommunications Lab		1.0
ELT 850	Design Projects Lab OR		
EGT 470	PLTW - Engineering Design and Development OR		
EGR 470	PLTW - Engineering Design and Development	2.0	3.0
MGT 195	Workplace Empowerment		3.0
	Technical Elective **		3.0
	Communication, Humanities, Social Science, Science, or Mathematics Elective		3.0
	Credits	16.0	17.0

67.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

****Technical Electives must be selected from the following:**

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Electronic Technology Diploma

The Electronic Technology Diploma program of study prepares students to be employed as technicians in the fields of electrical maintenance, installation and repair. The program was developed especially for industry and is valuable in the development, installation and maintenance of complex industrial processes as well as their electronic, controller and computer devices. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
NET 790	PC Support I		3.0
	Technical Elective **	3.0	5.0
	Credits	16.0	18.0

32.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

**Technical Elective must be selected from the following:

ATR 113 and ATR 114 Industrial Robotics 3 and Industrial Robotics Lab 2
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and PHY 211 Classical Physics I 4 and Classical Physics I Lab 1
 WEL 149 Arc Welding 3

Exercise Science

The Exercise Science program of study prepares students to transfer to a four-year institution for further education in pre-health professional degrees (pre-physical therapy, athletic training, or per-physician assistant), corporate wellness, personal trainer, cardiac rehabilitation, and human performance. Students gain a solid foundation of human biology, anatomy and physiology, nutrition, and exercise programming. Included in this program are tools to obtain a personal trainer certificate. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

PEH 142	*First Aid		3.0
ENG 105	Composition I		3.0
PEH 102	*Health		3.0
PSY 111	*Introduction to Psychology		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Second Semester

BIO 151	*Nutrition		3.0
BIO 157	*Human Biology		4.0
ENG 106	Composition II		3.0
PSY 210	Sport and Exercise Psychology		3.0
	General Elective		3.0
	Credits		16.0

Third Semester

PEH 170	*Principles of Weight Training		3.0
PEC 230	Introduction to Sports Medicine		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
SPC 112	Public Speaking		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

HSC 272	*Certified Personal Trainer		3.0
PET 230	Care and Prevention of Athletic Injuries		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
	Mathematics/Science Elective **		3.0
	Distributed Requirement		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended science electives:

PTA 120 Kinesiology 3
 CHM 166 General Chemistry I 5
 PHY 156 General Physics I 4

Graphic Communications

The Graphic Communications program of study provides an exciting and rewarding career for graduates. Graphic Communications provides students with skills needed for graphic arts in printing and web development, and with basic skills in marketing and e-commerce. Due to the enormous growth factor and ever-expanding technological advances, countless opportunities exist for graduates. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

GRA 140	Digital Imaging	3.0
GRA 173	Typography	3.0
GRA 104	Introduction to Graphic Communications	3.0
ART 120	2-D Design	3.0
SPC 122	Interpersonal Communication OR	
SPC 112	Public Speaking	3.0
	Credits	15.0

Second Semester

GRA 137	Digital Design	3.0
GRA 121	Digital Drawing	3.0
GRA 949	Special Topics	1.0
GRA 148	Visual Web Design	3.0
ENG 105	Composition I	3.0
CIS 207	Fundamentals of Web Programming OR	
BCA 155	Introduction to Web Design	3.0
	Credits	16.0

Third Semester

GRA 141	Digital Imaging II	3.0
GRA 949	Special Topics	1.0
BUS 154	E-business	3.0
MKT 110	Principles of Marketing	3.0
MGT 195	Workplace Empowerment	3.0
	Program Elective **	3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)	3.0
	Credits	19.0

Fourth Semester

GRA 949	Special Topics	1.0
MKT 150	Principles of Advertising	3.0
GRA 908	Cooperative Education	3.0
	Program Electives **	6.0
	Social Science/Humanities Elective	3.0
	Credits	16.0

66.0 Total Semester Hours Required

****Program electives must be selected from the following courses or subjects:**

Courses:

BCA 134 Word Processing 3
 BCA 142 Spreadsheets 3
 BCA 184 Comprehensive Web Page Design Software 3
 BUS 102 Introduction to Business 3
 BUS 121 Business Communications 3
 BUS 130 Introduction to Entrepreneurship 3
 ENG 106 Composition II 3
 GRA 165 Digital 3-D 3
 JOU 110 Introduction to Mass Media
 MKT 140 Principles of Selling 3
 MKT 154 Visual Merchandising 3
 MKT 184 Customer Service 3
 MKT 198 Sports Marketing 3
 MMS 113 Introduction to Media Production 3
 PHI 142 Ethics in Business 3

Subjects:

ART Art
 CIS Computer Programming
 CSC Computer Science

Graphic Communications Diploma

The Graphic Communications Diploma program is designed to provide graduates with knowledge and skills in to begin a career in the Graphic Communications industry, or go on and complete the Associate of Applied Science degree in Graphic Communications. Graduates of this program are awarded a Diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

GRA 104	Introduction to Graphic Communications	3.0
GRA 140	Digital Imaging	3.0
GRA 173	Typography	3.0
SPC 112	Public Speaking OR	
SPC 122	Interpersonal Communication	3.0
	Credits	12.0

Second Semester

GRA 137	Digital Design	3.0
GRA 121	Digital Drawing	3.0
GRA 148	Visual Web Design	3.0
ENG 105	Composition I	3.0
CIS 207	Fundamentals of Web Programming OR	
BCA 155	Introduction to Web Design	3.0
	Credits	15.0

27.0 Total Semester Hours Required

Human Services: Youth Worker

The Human Services Youth Worker program of study prepares students to work with children and adolescents within a variety of settings such as residential treatment centers, group homes, runaway crisis shelters, hospital-based adolescent programs, and in juvenile detention centers. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
PSY 111	Introduction to Psychology		3.0
HSV 259	*Introduction to Chemical Dependency		3.0
HSV 109	*Introduction to Human Services		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
SOC 230	*Juvenile Delinquency		3.0
HSV 225	*Counseling Techniques		3.0
HSV 131	*Fundamentals of Case Management		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Summer

	Philosophy Elective		3.0
	Credits		3.0

Third Semester

SPC 112	Public Speaking		3.0
PSY 121	Developmental Psychology		3.0
HUM 287	*Leadership Development Studies		3.0
HSV 115	*Agency and Community Resources		3.0
HSV 190	*Youth Care Issues		3.0
	Credits		15.0

Fourth Semester

PSY 224	*Adolescent Psychology		3.0
HSV 180	*Ethics for Human Service Professionals		1.0
HSV 802	*Internship		2.0
HSV 226	*Fundamentals of Family Counseling OR		
HSV 228	*Group Counseling Techniques		3.0
	Mathematics/Science Elective		3.0
	Humanities Elective **		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Humanities Electives:

FLS 141 Elementary Spanish I 4
LIT 134 Multicultural Literature 3
REL 101 Survey of World Religions 3

HVAC/R Maintenance Certificate

The HVAC/R Maintenance Certificate program of study provides the basic skills necessary to gain meaningful employment as an entry-level Heating, Ventilation & Air Conditioning (HVAC) apprentice or assistant. The certificate program is designed to train students to assist in becoming HVAC technicians. Students will learn to troubleshoot and service HVAC/R systems. The certificate does not qualify graduates for the State of Iowa's specialty license. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCR 121	Forced Air Heating Systems		2.0
HCR 103	Introduction to HVAC/R and Safety		3.0
HCR 201	Applied Practices I: Repair and Service		4.0
HCR 188	Electricity for HVAC/R		4.0
MAT 743	Technical Math		3.0
	Credits		16.0

16.0 Total Semester Hours Required

HVAC/R Technology Diploma

The HVAC/R Technology Diploma program of study provides all of the skills necessary to gain meaningful employment as an entry-level Heating, Ventilation & Air Conditioning (HVAC) technician. The diploma program is designed to train students to be HVAC technicians in a real-world, hands-on environment. Students will learn to troubleshoot, install, and maintain HVAC/R systems. This program is designed to meet the related technical instruction for some DOE apprenticeship programs. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCR 121	Forced Air Heating Systems		2.0
HCR 103	Introduction to HVAC/R and Safety		3.0
HCR 201	Applied Practices I: Repair and Service		4.0
HCR 188	Electricity for HVAC/R		4.0
MAT 743	Technical Math		3.0
	Credits		16.0

Second Semester

HCR 208	Boilers and Hydronic Systems		4.0
HCR 301	Applied Practices II: Advanced Repair and Service		3.0
HCR 250	Electronic Controls		3.0
HCR 348	Soldering, Piping, and Fitting		3.0
MGT 130	Principles of Supervision		3.0
	Credits		16.0

Summer

HCR 402	HVAC/R Internship OR		
HCR 401	HVAC/R Capstone		4.0
HCR 458	Alternative Energy Sources		2.0
HCR 448	Applied Practices III: Installation		3.0
	Credits		9.0

41.0 Total Semester Hours Required

Industrial Engineering Technology

The Industrial Engineering Technology program of study is designed to provide the knowledge, skills, and abilities to successfully respond to a broad range of work requirements and duties within industrial, manufacturing, processing, and building maintenance environments. Students learn skills in maintaining and troubleshooting electrical and mechanical systems and machinery. The diverse education includes training in welding, electrical, hydraulics, pneumatics, print reading, instrumentation, applied mathematics, critical thinking skills, and computer operation. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
MFG 145	Light Machining for Maintenance Trades		4.0
WEL 149	Arc Welding		3.0
WTT 143	Mechanical Power Transmission		3.0
ELE 106	Electrical Blueprint Reading		2.0
	Credits		17.0

Summer

	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
IND 930	Industrial Internship		4.0
	Credits		7.0

Third Semester

IND 187	Predictive Maintenance		2.0
IND 191	Preventative Maintenance		2.0
ELE 155	National Electrical Code I		2.0
ATR 133	Fluid Power Systems		2.0
MFG 211	Basic Machine Theory		2.0
SPC 122	Interpersonal Communication		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

BUS 280	Fundamentals of Lean Process Improvement		3.0
MFG 190	Metallurgy		2.0
MGT 195	Workplace Empowerment		3.0
CAD 139	Introduction to CAD/CAM		3.0
HCR 208	Boilers and Hydronic Systems **		4.0
LEO 360	Lasers in Manufacturing		3.0
	Credits		18.0

74.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Industrial Maintenance Technician

The Industrial Maintenance Technician program of study provides basic skills in welding, print reading, pneumatics and hydraulics, blue print reading, lean manufacturing, and predictive and preventative maintenance. Students utilize hands-on training to install, maintain, and troubleshoot the equipment utilized by today's industries. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
MFG 145	Light Machining for Maintenance Trades		4.0
WEL 149	Arc Welding		3.0
WTT 143	Mechanical Power Transmission		3.0
	Credits		15.0

31.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Industrial Technology Certificate

The Industrial Technology Certificate program of study prepares students to be employed as technicians in the fields of electrical maintenance and production. The program is developed especially for the industry in the development, installation and maintenance of complex industrial processes as well as their electronic, controller, and computer devices. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

16.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Literature

The Literature program of study prepares students to transfer to four-year colleges and universities to complete undergraduate majors in Literature and Communication Arts or pursue related fields in education. Students study American literature, fiction, poetry, and drama. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

LIT 110	American Literature to Mid 1800s		3.0
CSC 110	Introduction to Computers		3.0
ENG 105	Composition I		3.0
MAT 157	Statistics		4.0
	Social Science Elective		3.0
	Credits		16.0

Second Semester

LIT 111	American Literature since Mid 1800s		3.0
SPC 112	Public Speaking		3.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		15.0

Third Semester

DRA 101	Introduction to Theatre		3.0
LIT 130	African American Literature OR		
LIT 134	Multicultural Literature OR		
LIT 190	Women Writers		3.0
	Lab Science Requirement		4.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		16.0

Fourth Semester

SPC 122	Interpersonal Communication		3.0
	Literature Elective		3.0
	Mathematics/Science Elective		3.0
	General Electives		4.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

Must include at least 12 credit hours of Literature courses.

Management & Human Resources

The Management and Human Resources program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision and fundamental management skills. Human relations, accounting, marketing, teams and quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training and evaluation, compensation and benefits, as well as labor/management relations are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MGT 101	Principles of Management		3.0
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

Second Semester

CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
MGT 190	Employee Compensation and Benefits Management		3.0
ACC 111	Introduction to Accounting OR		
ACC 121	Principles of Accounting I OR		
ACC 122	Principles of Accounting II		3.0
MKT 110	Principles of Marketing		3.0
MAT 711	Business and Financial Mathematics **		3.0
	Credits		15.0

Third Semester

BUS 102	Introduction to Business		3.0
PSY 111	Introduction to Psychology		3.0
ENG 105	Composition I		3.0
BUS 121	Business Communications		3.0
	Social Science/Humanities Elective		3.0
	Credits		15.0

Fourth Semester

BUS 154	E-business		3.0
ACC 311	Computer Accounting		3.0
MGT 165	Principles of Quality		3.0
SPC 122	Interpersonal Communication		3.0
MGT 195	Workplace Empowerment		3.0
MGT 932	Internship ***	3.0	8.0
	Credits	18.0	23.0

66.0 Total Semester Hours Required

**May substitute with MAT 102 or higher.

***A minimum of three credits of internship are required.

Management & Human Resources Certificate

The Management & Human Resources Certificate program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision, and fundamental management skills. Human relations, accounting, marketing, teams, quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training and evaluation, compensation, and benefits are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. This certificate may be used as a foundation for a Management & Human Resources Diploma. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MGT 101	Principles of Management		3.0
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

18.0 Total Semester Hours Required

Management & Human Resources Diploma

The Management & Human Resources Diploma program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision, and fundamental management skills. Human relations, accounting, marketing, teams, quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. This diploma may be used as a foundation for a Management & Human Resources Associate of Applied Science degree program. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MGT 101	Principles of Management		3.0
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

Second Semester

CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
MGT 190	Employee Compensation and Benefits Management		3.0
ACC 111	Introduction to Accounting OR		
ACC 121	Principles of Accounting I OR		
ACC 122	Principles of Accounting II		3.0
MKT 110	Principles of Marketing		3.0
MAT 711	Business and Financial Mathematics *		3.0
	Credits		15.0

33.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Marketing

The Marketing program of study provides students with an opportunity to develop a technical understanding of marketing/retail principles and procedures, merchandise selection/buying/distribution, entrepreneurship, and promotional concepts. Students further develop their management potential through extensive paid internships. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MKT 140	Principles of Selling		3.0
MKT 154	Visual Merchandising ****		3.0
MKT 163	Merchandising ****		3.0
MKT 185	Marketing Internship I ****		2.0
MKT 191	Seminar I: Career Options ****		1.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		15.0

Second Semester

MGT 170	Human Resource Management		3.0
BUS 130	Introduction to Entrepreneurship		3.0
MKT 150	Principles of Advertising		3.0
BCA 184	Comprehensive Web Page Design Software OR		
	Marketing/Business Elective *		3.0
	General Electives **		6.0
	Credits		18.0

Third Semester

MKT 110	Principles of Marketing		3.0
MKT 184	Customer Service ****		3.0
BUS 154	E-business		3.0
MKT 189	Marketing Internship II ****		2.0
MKT 193	Seminar II: Applications in Management ****		1.0
MKT 165	Retail Management ****		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher) ***		3.0
	Credits		18.0

Fourth Semester

	Marketing/Business Elective *		3.0
MKT 190	International Marketing		3.0
BUS 121	Business Communications		3.0
MGT 195	Workplace Empowerment		3.0
	Social Science/Humanities Elective		3.0
	Credits		15.0

66.0 Total Semester Hours Required

****Courses offered on a two-year rotation.

***Business and Financial Math recommended.

**Computer science course recommended.

***Marketing/Business Electives must be selected from the following:**

ACC 111 Introduction to Accounting 3
 ACC 121 Principles of Accounting I 3
 ACC 122 Principles of Accounting II 3
 APP 150 Clothing Selection 3
 APP 210 Apparel Textiles 3
 BUS 102 Introduction to Business 3
 MGT 101 Principles of Management 3
 MKT 198 Sports Marketing 3

Marketing Management

The Marketing Management program of study prepares graduates to perform basic marketing functions in industrial, wholesale, retail, and service areas. Students learn the principles of marketing and marketing management, including sales, advertising, communication, business mathematics, and computer skills. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

MKT 140	*Principles of Selling		3.0
MKT 110	*Principles of Marketing		3.0
MGT 101	*Principles of Management		3.0
ENG 105	Composition I		3.0
ECN 120	Principles of Macroeconomics		3.0
	Credits		15.0

Second Semester

MKT 150	*Principles of Advertising		3.0
	*Marketing/Business Elective **		3.0
ECN 130	Principles of Microeconomics		3.0
ENG 106	Composition II		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Third Semester

SPC 112	Public Speaking		3.0
	Mathematics/Science Elective		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Distributed Requirement		3.0
	*Marketing/Business Elective **		3.0
	Credits		18.0

Fourth Semester

MKT 190	*International Marketing		3.0
MGT 170	*Human Resource Management		3.0
	Lab Science Requirement		4.0
	Humanities Electives		6.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

****Marketing/Business Electives must be selected from the following:**

ACC 121 Principles of Accounting I 3
 ACC 122 Principles of Accounting II 3
 BUS 121 Business Communications 3
 BUS 154 E-business 3
 BUS 130 Introduction to Entrepreneurship 3
 MKT 154 Visual Merchandising 3
 MKT 185 Marketing Internship I 2
 MKT 189 Marketing Internship II 2

Mathematics

The Mathematics program of study prepares students to transfer to a baccalaureate program in mathematics. Students also have the mathematics prerequisite needed for science classes at the junior and senior level. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

MAT 211	*Calculus I		5.0
ENG 105	Composition I		3.0
	*Science Elective with Lab		5.0
	General Elective		3.0
	Credits		16.0

Second Semester

MAT 217	*Calculus II		5.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	General Electives		6.0
	Credits		17.0

Third Semester

MAT 220	*Calculus III		5.0
SPC 112	Public Speaking		3.0
	Humanities Elective		3.0
	General Elective		3.0
	Credits		14.0

Fourth Semester

MAT 225	*Differential Equations OR		
MAT 227	*Elementary Differential Equations with Laplace	3.0	4.0
MAT 157	*Statistics		4.0
	Social Science/Humanities Elective		3.0
	General Electives		6.0
	Credits	16.0	17.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Media Studies: Media Production

The Applied Electronic Media Studies: Media Production program of study will focus on all aspects of storytelling as it relates to video production and distribution (i.e. cable, web, and new media applications). The program is highly specialized and allows for students to work in multiple video production platforms found in all media environments today. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

JOU 110	Introduction to Mass Media		3.0
MMS 113	Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	Electronic Media Performance		3.0
BCA 155	Introduction to Web Design		3.0
	Credits		15.0

Second Semester

MMS 114	Media Production II		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
MMS 134	Media Writing		3.0
MMS 204	New Media Production		3.0
MMS 296	Video Practicum I		1.0
JOU 211	Ethics in the Media		3.0
	Credits		16.0

Third Semester

MMS 231	Advanced Video Production I		3.0
SPC 112	Public Speaking		3.0
MMS 291	Video Cooperative Education		3.0
	Electronic Media Studies Elective **		3.0
MMS 297	Video Practicum II		1.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

MMS 150	Electronic News Writing		3.0
MMS 232	Advanced Video Production II		3.0
MMS 301	Video Practicum III		2.0
	Electronic Media Studies Electives **		6.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

64.0 Total Semester Hours Required

****Electronic Media Studies electives must be selected from the following:**

Courses:

ART 184 Photography 3
 ART 186 Digital Photography 3
 GRA 140 Digital Imaging 3
 GRA 165 Digital 3-D 3
 MKT 110 Principles of Marketing 3
 MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Media Studies: Radio

Media Studies: Radio program of study allows students to work with professional radio personnel to enable graduates to move directly into the radio industry. Coursework develops both on air and behind the scenes skills including announcing, production, sales and media marketing. Students enhance their classroom experience through participation in station operations at KIWR-FM, 89.7 The River. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 341	Radio Practicum II		1.0
MMS 135	Introduction to Copy Writing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 190	Broadcast Promotions		3.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 204	New Media Production		3.0
	Credits		16.0

Third Semester

MMS 342	Radio Practicum III		1.0
MMS 350	Media Sales Practicum		1.0
MMS 223	Advanced Radio Performance		3.0
MMS 202	Social Media Marketing		3.0
PHI 211	Ethics in the Media		3.0
	Program Elective *		3.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Fourth Semester

MMS 134	Media Writing		3.0
MMS 261	Programming for the Electronic Media		3.0
MMS 932	Media Studies Internship		3.0
	Program Elective *		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		15.0

64.0 Total Semester Hours Required

**Program electives must be selected from the following:

Courses:

ART 184 Photography 3
 ART 125 Digital Media 3
 MKT 110 Principles of Marketing 3
 MKT 140 Principles of Selling 3
 MUS 305 Introduction to Audio 3
 MUS 306 Digital Audio Production I 3

Subject:

MMS Media Studies

Media Studies: Radio Performance & Production

The Applied Electronic Media Studies: Radio Broadcasting Performance and Production program of study allows students to work with professional radio personnel and learn how to develop the skills needed to move directly into the radio industry after graduation. The program features extensive work in the areas of on-air performance, vocal and personality development, and production. In addition, the program includes general coursework in promotions, sales and management, news writing, maintaining web sites, and programming. Students enhance their classroom experience through participation in station operations at KIWR-FM, 89.7 The River. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 341	Radio Practicum II		1.0
MMS 135	Introduction to Copy Writing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 190	Broadcast Promotions		3.0
	Electronic Media Studies Elective **		3.0
MMS 261	Programming for the Electronic Media		3.0
	Credits		16.0

Third Semester

MMS 342	Radio Practicum III		1.0
MMS 223	Advanced Radio Performance		3.0
BCA 155	Introduction to Web Design		3.0
	Social Science/Humanities Elective		3.0
	Electronic Media Studies Elective **		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		16.0

Fourth Semester

MMS 150	Electronic News Writing OR		
MMS 134	Media Writing		3.0
MMS 343	Radio Practicum IV		1.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 290	Radio Cooperative Education		3.0
	Electronic Media Studies Elective **		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		16.0

64.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

ART 184 Photography
 ART 186 Digital Photography
 GRA 140 Digital Imaging 3
 JOU 211 Ethics in the Media 3
 MGT 130 Principles of Supervision 3
 MKT 110 Principles of Marketing 3
 MKT 140 Principles of Selling 3
 MUS 305 Introduction to Audio 3
 MUS 306 Digital Audio Production I 3

Subject:

MMS Media Studies

Media Studies: Radio Promotions, Sales & Web

The Applied Electronic Media Studies: Radio Broadcasting Promotions, Sales and Web program of study features extensive coursework in the areas of sales, management, promotions and web design. The program allows students to work with professional radio personnel to enable graduates to move directly into the radio industry. Coursework includes intensive work in sales, marketing, management, promotions and web design. The program also features general coursework in production, radio performance and announcing, and programming. Students enhance their classroom experience through participation in station operations at KIWR-FM, 89.7 The River. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
MKT 140	Principles of Selling		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 135	Introduction to Copy Writing		3.0
MMS 190	Broadcast Promotions		3.0
MMS 261	Programming for the Electronic Media		3.0
MMS 260	Electronic Media Sales and Management		3.0
BCA 155	Introduction to Web Design		3.0
	Credits		15.0

Third Semester

MKT 110	Principles of Marketing		3.0
GRA 140	Digital Imaging		3.0
	Electronic Media Studies Elective **		3.0
JOU 211	Ethics in the Media		3.0
MMS 350	Media Sales Practicum		1.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		16.0

Fourth Semester

SPC 112	Public Speaking		3.0
MMS 290	Radio Cooperative Education		2.0
	Electronic Media Studies Electives **		6.0
	Social Science/Humanities Elective		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

64.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

ART 184 Photography 3
 ART 186 Digital Photography 3
 GRA 165 Digital 3-D 3
 MGT 130 Principles of Supervision 3
 MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Media Studies: Radio/Television/Video

The Electronic Media Studies: Radio/Television/Video program of study is designed as a transfer program with basic core courses in all aspects of the broadcast industry. The program coursework contains both strong theoretical and practical applications. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

JOU 110	*Introduction to Mass Media		3.0
MMS 105	*Audio Production		3.0
MMS 113	*Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	*Electronic Media Performance		3.0
	Credits		15.0

Second Semester

MMS 135	*Introduction to Copy Writing		3.0
MMS 150	*Electronic News Writing		3.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	Mathematics/Science Elective		3.0
	Credits		15.0

Third Semester

SPC 112	*Public Speaking		3.0
	Distributed Requirement		3.0
	Social Science Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Humanities Elective		3.0
	Credits	15.0	16.0

Fourth Semester

MMS 260	*Electronic Media Sales and Management		3.0
	*Electronic Media Studies Elective **		3.0
	Lab Science Requirement		4.0
	Humanities Electives		6.0
	Social Science Elective		3.0
	Credits		19.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

65.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

BCA 155 Introduction to Web Design 3
 ART 184 Photography 3
 ART 186 Digital Photography 3
 MUS 305 Introduction to Audio Production 3
 MUS 306 Digital Audio Production I 3
 JOU 211 Ethics in Media 3

Subjects:

MMS Media Studies

Media Studies: Sports Media Technology

The Media Studies: Sports Media Technology program of study prepares students to be employed as sports media specialists. The two-year program provides students the opportunity to explore and hone their skills in the sports media industry. Students work to develop skills in radio, video and sports journalism. Upon completion of the program, students are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
MMS 105	Audio Production		3.0
MMS 123	Electronic Media Performance		3.0
MMS 113	Introduction to Media Production		3.0
JOU 110	Introduction to Mass Media		3.0
MMS 306	Sports Media Practicum I		1.0
	Credits		16.0

Second Semester

MMS 204	New Media Production		3.0
PHI 211	Ethics in the Media		3.0
MMS 152	Spring Sports Announcing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 114	Media Production II		3.0
MMS 307	Sports Media Practicum II		1.0
	Credits		16.0

Third Semester

MMS 146	Sports Information and Copywriting		3.0
MAT 711	Business and Financial Mathematics		3.0
MMS 202	Social Media Marketing		3.0
MMS 107	Sports Field Production		3.0
MMS 231	Advanced Video Production I **		3.0
MMS 308	Sports Media Practicum III		1.0
	Credits		16.0

Fourth Semester

MMS 134	Media Writing		3.0
MGT 195	Workplace Empowerment		3.0
	Electronic Media Studies Elective		3.0
SPC 112	Public Speaking		3.0
MMS 932	Media Studies Internship		3.0
MMS 309	Sports Media Practicum IV		1.0
	Credits		16.0

64.0 Total Semester Hours Required

**Program elective must be selected from the following:

Courses:

ART 184 Photography 3
ART 125 Digital Media 3

Subject:

MMS Media Studies

Media Studies: Television/Video

The Media Studies: Television/Video program of study allows students to work with professional video and television personnel to develop the skills needed to move directly into industry after graduation. The program focuses on all aspects of television and video production and features extensive work in shooting, editing, and storytelling. Students enhance their classroom experience through participation in station operations at CBTV-17. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

JOU 110	Introduction to Mass Media		3.0
MMS 113	Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
	Credits		15.0

Second Semester

MMS 114	Media Production II		3.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 134	Media Writing		3.0
MMS 204	New Media Production		3.0
MMS 296	Video Practicum I		1.0
PHI 211	Ethics in the Media		3.0
	Credits		16.0

Third Semester

MMS 231	Advanced Video Production I		3.0
MAT 711	Business and Financial Mathematics		3.0
ART 125	Digital Media		3.0
MMS 202	Social Media Marketing		3.0
MMS 297	Video Practicum II		1.0
	Program Elective *		3.0
	Credits		16.0

Fourth Semester

MMS 190	Broadcast Promotions		3.0
	Program Elective *		3.0
MMS 232	Advanced Video Production II		3.0
MMS 301	Video Practicum III		2.0
MMS 932	Media Studies Internship		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

61.0 Total Semester Hours Required

**Program electives must be selected from the following:

Courses:

ART 184 Photography 3
GRA 140 Digital Imaging 3
GRA 165 Digital 3-D 3
MKT 110 Principles of Marketing 3
MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Medical Assistant

The Medical Assistant program serves “to prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.”; preparing students to be employed as administrative and clinical assistants in a medical provider’s office. The ten-month program includes practical experience of 190 unpaid practicum hours in a provider’s office. Upon completion, students are eligible to take the American Association of Medical Assistants (AAMA) examination to become a Certified Medical Assistant (CMA, AAMA). Graduates of this program are awarded a diploma. The Medical Assistant Program at Iowa Western Community College is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assistant Education Review Board (MAERB).

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HSC 128	Anatomy and Physiology for Allied Health Programs		3.0
MAP 123	Administrative Medical Office Procedures		3.0
MAP 353	Clinical Procedures I		4.0
HSC 113	Medical Terminology		2.0
MAP 533	Diseases and Disorders		2.0
	Communications Requirement (ENG 105 or 110)		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		20.0

Second Semester

MAP 215	Medical Laboratory Techniques		4.0
MAP 358	Clinical Procedures II		5.0
MAP 514	Basics of Pharmacology		3.0
MAP 131	Advanced Medical Office Procedures		4.0
	Psychology Elective		3.0
	Credits		19.0

Summer

MAP 612	Medical Assistant Externship		3.0
MAP 601	Medical Assistant Seminar		1.0
	Credits		4.0

43.0 Total Semester Hours Required

Students must earn a grade of “C” or higher in all courses with a MAP prefix in order to graduate.

Medical/Clinical Assistant Certificate

The Medical/Clinical Assistant Certificate program of study prepares individuals, under the supervision of physicians, to provide medical office administrative services and perform clinical duties, including patient intake and care, routine diagnostic and recording procedures, pre-examination and examination assistance, and the administration of first aid. This program includes instruction in basic anatomy and physiology, medical terminology, medical ethics, patient communications, medical office procedures, and clinical diagnostic, testing and treatment procedures. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 157	Human Biology OR		
HSC 128	Anatomy and Physiology for Allied Health Programs		3.0
HSC 113	Medical Terminology		2.0
MAP 123	Administrative Medical Office Procedures		3.0
MAP 353	Clinical Procedures I		4.0
SPC 122	Interpersonal Communication		3.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

18.0 Total Semester Hours Required

Music: Music Technology

The Music Technology program of study is designed to prepare students for all phases of music, including music theory, sight singing and ear training, keyboard skills, and music performance. In addition to receiving traditional music training, this program will also introduce aspects of live music production and digital audio recording. With this combination of training, students can apply technical music skills to music education or music performance by operating mixing consoles, recording rehearsals and performances, and sequencing and notating music. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

MUS305	*Introduction to Audio		3.0
MUS306	*Digital Audio Production I		3.0
MUS400	*Music in Theory and Practice I		3.0
MUS410	*Ear Training and Sight Singing I		1.0
MUS185	*Class Piano I		1.0
ENG105	Composition I		3.0
SPC112	Public Speaking		3.0
	Credits		17.0

Second Semester

MUS307	*Digital Audio Production II		3.0
MUS401	*Music in Theory and Practice II		3.0
MUS411	*Ear Training and Sight Singing II		1.0
MUS186	*Class Piano II		1.0
ENG106	Composition II		3.0
MAT157	Statistics		4.0
	Credits		15.0

Third Semester

MUS330	*Audio Mixing I		3.0
MUS402	*Music in Theory and Practice III		3.0
MUS412	*Ear Training and Sight Singing III		1.0
MUS187	*Class Piano III		1.0
	Lab Science Requirement		4.0
PSY121	Developmental Psychology		3.0
	Credits		15.0

Fourth Semester

MUS310	*Recording Project I		1.0
MUS403	*Music in Theory and Practice IV		3.0
MUS413	*Ear Training and Sight Singing IV		1.0
MUS188	*Class Piano IV		1.0
	Mathematics/Science Elective		3.0
	Psychology Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

62.0 Total Semester Hours Required

Nursing: Advanced Nursing Assistant Certificate

The Advanced Nursing Assistant Certificate program of study prepares students for entry level positions in healthcare. The curriculum exposes students to processes, vocabulary and an overview of the healthcare field. Upon completion of this program, students are eligible to take the Nurse Aide written and skills tests and become certified as a Certified Nurse Aid (CNA). Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

HSC172	Nurse Aide		3.0
HSC113	Medical Terminology		2.0
PEH130	CPR and First Aid in the Workplace		1.0
MGT195	Workplace Empowerment		3.0
BIO157	Human Biology		4.0
ENG110	Writing For The Workplace OR		
ENG105	Composition I *		3.0
	Credits		16.0

16.0 Total Semester Hours Required

*Students interested in advancing to the Practical or Associate Degree Nursing program should complete these courses.

Nursing: Associate Degree Nursing

The Associate Degree Nursing program of study prepares students to deliver safe patient care in simple and complex situations. Learners focus on acquiring a knowledge base in basic sciences, oral and written communication, human behavior, and social sciences. These courses form a foundation for the study of the nursing care needs of persons of all ages. A combination of classroom instruction and actual supervised experiences caring for patients in a variety of health care settings is used to prepare learners to function in an entry-level staff nurse position after graduation. Upon completion of the first year of the curriculum, graduates are awarded a diploma and are qualified to write the National Council of State Board of Nursing (NCLEX-PN) examination for practical nurses. Upon completion of the second year of the curriculum, graduates are awarded an Associate of Applied Science (A.A.S.) degree and qualified to write the National Council of State Boards of Nursing (NCLEX-RN) examination for registered nurses.

Program Prerequisite: Current, valid CNA Certificate.

General Education Courses that must be completed prior to first semester of nursing:

ENG 105 Composition I 3
 PSY 121 Developmental Psychology 3
 BIO 168 Human Anatomy and Physiology I 4
 BIO 173 Human Anatomy and Physiology II 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

PNN 228	Foundations of Nursing I	6.0
PNN 290	Health Assessment Across the Lifespan	2.0
PNN 721	Foundations of Nursing Clinical I	2.0
PNN 201	Introduction to Math and Medications	1.0
SPC 112	Public Speaking	3.0
	Credits	14.0

Second Semester

PNN 229	Foundations of Nursing II	4.0
PNN 723	Foundations of Nursing Clinical II	2.0
PNN 282	Pharmacology II	2.0
PNN 446	Nursing Care of the Growing Family	4.0
BIO 151	Nutrition	3.0
	Credits	15.0

Third Semester

ADN 213	Pharmacology Applications	4.0
ADN 831	Trends and Issues	3.0
ADN 106	Success in Nursing	1.0
PSY 111	Introduction to Psychology	3.0
MGT 195	Workplace Empowerment	3.0
	Credits	14.0

Fourth Semester

ADN 421	Maternal Child Nursing II	3.0
ADN 171	Concepts of Nursing I	5.0
ADN 740	Concepts of Nursing Clinic	3.0
BIO 186	Microbiology	4.0
	Credits	15.0

Fifth Semester

ADN 292	Advanced Mental Health Nursing	2.0
ADN 180	Advanced Concepts of Nursing	4.0
ADN 760	Advanced Concepts of Nursing Clinical	4.0
ADN 499	Passage to Professional Practice	1.0
SOC 110	Introduction to Sociology	3.0
	Credits	14.0

86.0 Total Semester Hours Required

Courses with a PNN/ADN prefix must be completed in the sequence listed above. Students must earn a "C" or higher in all required courses in order to graduate.

Nursing: Practical Nursing

The Practical Nursing program of study prepares graduates to provide direct nursing care for individual clients with common health needs in structured health care settings under the direction and supervision of a registered nurse or physician. Graduates are awarded a diploma and are qualified to write the National Council of State Board of Nursing (NCLEX-PN) examination for practical nurses. This common core of nursing knowledge supports an educational ladder concept and serves as the foundational courses for the Associate Degree Nursing program offered at the college.

Program Prerequisite: Current, valid CNA certificate.

General Education Courses that must be completed prior to first semester of nursing:

ENG 105 Composition I 3
 PSY 121 Developmental Psychology 3
 BIO 168 Human Anatomy and Physiology I 4
 BIO 173 Human Anatomy and Physiology II 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

PNN 228	Foundations of Nursing I	6.0
PNN 290	Health Assessment Across the Lifespan	2.0
PNN 721	Foundations of Nursing Clinical I	2.0
SPC 112	Public Speaking	3.0
PNN 201	Introduction to Math and Medications	1.0
	Credits	14.0

Second Semester

PNN 229	Foundations of Nursing II	4.0
PNN 723	Foundations of Nursing Clinical II	2.0
PNN 282	Pharmacology II	2.0
PNN 446	Nursing Care of the Growing Family	4.0
BIO 151	Nutrition	3.0
	Credits	15.0

43.0 Total Semester Hours Required

Courses with PNN prefix must be completed in the sequence listed above. Students must earn a "C" or higher in all required courses in order to graduate.

Photonics System Diploma

The Photonics System diploma program is the study of lasers and optics in the manufacturing industry. Students gain working knowledge of skills of electronics, with basic knowledge and skills in lasers and optics. This program prepares students to enter a technical level career in electronics with a basic understanding of photonics. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

LEO 360	Lasers in Manufacturing		3.0
LEO 230	Fundamentals of Light and Lasers		5.0
NET 790	PC Support I		3.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
	Credits		16.0

32.0 Total Semester Hours Required

* May substitute with MAT 102 or higher.

Photonics System Technician

The Photonics System Technician program is the study of lasers and optics. Students will gain working knowledge and skills of electronic and electromechanical devices/systems, combined with specialty knowledge and skills in photonics. Through lab experiences students will be able to efficiently and effectively repair, operate, maintain, and calibrate photonic subsystems, and then integrate these subsystems into full systems. This program prepares students for a technical level career in photonics in four primary electronic fields: computers, telecommunications, biomedical electronics, and industrial electronics. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

LEO 360	Lasers in Manufacturing		3.0
LEO 230	Fundamentals of Light and Lasers		5.0
NET 790	PC Support I		3.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
	Credits		16.0

Third Semester

LEO 340	Laser Systems and Applications I		5.0
ELT 523	Electronic Devices		4.0
	Communication, Humanities, or Social Science Elective		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

Fourth Semester

ELT 432	Telecommunications		4.0
ELT 433	Telecommunications Lab		1.0
ATR 113	Industrial Robotics		3.0
ATR 114	Industrial Robotics Lab		2.0
LEO 450	Laser Systems and Applications II		5.0
MGT 195	Workplace Empowerment		3.0
	Credits		18.0

68.0 Total Semester Hours Required

* May substitute with MAT 102 or higher.

Physical Therapist Assistant

The Physical Therapist Assistant program of study prepares graduates to assume an active role in the provision of physical therapy services under the direction and supervision of a licensed physical therapist. A combination of classroom, laboratory and actual supervised clinical experiences caring for patients is used. Graduates of the program can seek employment in hospitals, outpatient clinics, long-term care facilities or other health related agencies. Graduates are awarded an Associate of Applied Science (A.A.S.) degree. The Physical Therapist Assistant program at Iowa Western Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, VA 22314; telephone: 703-706-3245; email: accreditation@apta.org; website: <http://www.capteonline.org>.

Prerequisite: Current, valid American Heart Association Healthcare Provider CPR.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 168	Human Anatomy and Physiology I	4.0
ENG 105	Composition I	3.0
MAT 743	Technical Math **	3.0
HSC 113	Medical Terminology	2.0
PTA 102	Introduction to Physical Therapist Assistant	3.0
	Credits	15.0

Second Semester

BIO 173	Human Anatomy and Physiology II	4.0
BIO 211	Pathophysiology	3.0
PSY 111	Introduction to Psychology	3.0
PTA 105	Basic Skills for the Physical Therapist Assistant	3.0
SPC 120	Intercultural Communications	3.0
	Credits	16.0

Third Semester

PTA 107	Documentation for Physical Therapist Assistant	1.0
PTA 181	Therapeutic Modality	3.0
PTA 120	Kinesiology	3.0
PTA 222	Therapeutic Exercise I	3.0
PTA 310	Clinical I	1.0
	Credits	11.0

Fourth Semester

PTA 215	Orthopedic Issues	4.0
PTA 227	Therapeutic Exercise II	3.0
PTA 248	Neurology	4.0
PTA 385	Physical Therapist Assistant Clinical II	3.0
	Credits	14.0

Fifth Semester

MGT 195	Workplace Empowerment	3.0
PTA 412	Physical Therapist Assistant Clinical III	4.0
PTA 414	Physical Therapist Assistant Clinical IV	5.0
PTA 280	Seminar	1.0
	Credits	13.0

69.0 Total Semester Hours Required

**May substitute MAT 121 or higher.

Students must earn a grade of "C" or higher in all required courses in order to graduate.

Pre-Engineering

The Pre-Engineering program of study prepares students to transfer to a baccalaureate degree program in engineering. This program provides a varying number of transfer credits depending upon the type of engineering and transfer institution requirements. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

MAT 211	*Calculus I	5.0
ENG 105	Composition I	3.0
CHM 166	*General Chemistry I	5.0
EGR 100	*Engineering Orientation	1.0
EGR 160	*Engineering I	3.0
	Credits	17.0

Second Semester

MAT 217	*Calculus II	5.0
ENG 106	Composition II	3.0
PHY 210	*Classical Physics I	4.0
PHY 211	*Classical Physics I Lab	1.0
EGR 165	*Engineering II	3.0
	Credits	16.0

Third Semester

MAT 227	*Elementary Differential Equations with Laplace	4.0
PHY 220	Classical Physics II	4.0
PHY 221	Classical Physics II Lab	1.0
	Social Science/Humanities Electives **	6.0
	Credits	15.0

Fourth Semester

MAT 220	Calculus III	5.0
SPC 112	Public Speaking	3.0
CHM 176	General Chemistry II	5.0
	Social Science/Humanities Elective **	3.0
	Credits	16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Electives should be chosen to match requirements of transfer institutions.

Robotics/Automated Systems Engineering Technology

The Robotics/Automated Systems Engineering Technology program of study prepares students for a technical-level career in robotic automation, design, installation and service. Students learn on and with the same robots, controllers, and programming languages used by automated manufacturing companies. Graduates are trained for entry-level jobs in the ever-expanding robotic automation industry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls	2.0
ELT 331	Circuit Analysis I	4.0
ELT 332	Circuit Analysis I Lab	1.0
IND 109	Equipment Safety and Operation	3.0
IND 117	Industrial Engineering Technology Orientation	3.0
MAT 743	Technical Math *	3.0
	Credits	16.0

Second Semester

ATR 113	Industrial Robotics	3.0
ATR 114	Industrial Robotics Lab	2.0
ELT 250	Programmable Logic Controllers	3.0
ELT 251	Programmable Logic Controllers Lab	2.0
ELT 346	Circuit Analysis II	3.0
ELT 347	Circuit Analysis II Lab	2.0
	Technical Elective	3.0
	Credits	18.0

Summer

ATR 119	Engineering Graphics and Design OR	
EGT 400	PLTW - Introduction to Engineering Design OR	
EGR 400	PLTW - Introduction to Engineering Design OR	
EGR 160	Engineering I	3.0
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	6.0

Third Semester

ATR 124	Application Planning and Layout	3.0
ATR 133	Fluid Power Systems	2.0
ATR 140	Applied Robotics Lab I	6.0
ELT 252	Advanced Programmable Logic Controllers	3.0
ELT 253	Advanced Programmable Logic Controllers Lab	2.0
MGT 195	Workplace Empowerment	3.0
	Credits	19.0

Fourth Semester

ATR 147	Applied Robotics Lab II	6.0
ATR 152	Robot Controller Maintenance	2.0
	Technical Elective **	3.0
	Communication, Humanities, Social Science, Science, or Mathematics Elective	3.0
	Social Science/Humanities Elective	3.0
	Credits	17.0

76.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Electives must be selected from the following:

ATR-170 Robotics/Automated Systems Internship
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 NET 790 PC Support 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Robotics/Automated Systems Technician

The Robotics/Automated Systems Technician program of study prepares students to be employed as industrial automation technicians. Graduates are trained for entry-level jobs involving the implementation, installation, and maintenance of industrial automation systems. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls	2.0
ELT 331	Circuit Analysis I	4.0
ELT 332	Circuit Analysis I Lab	1.0
IND 109	Equipment Safety and Operation	3.0
IND 117	Industrial Engineering Technology Orientation	3.0
MAT 743	Technical Math *	3.0
	Credits	16.0

Second Semester

ATR 113	Industrial Robotics	3.0
ATR 114	Industrial Robotics Lab	2.0
ELT 250	Programmable Logic Controllers	3.0
ELT 251	Programmable Logic Controllers Lab	2.0
ELT 346	Circuit Analysis II	3.0
ELT 347	Circuit Analysis II Lab	2.0
	Technical Elective **	3.0
	Credits	18.0

34.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Elective must be selected from the following:

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Social Media Certificate

The Social Media Certificate program of study is designed for professionals in any industry who wish to create social media content and further their organization's brand. The curriculum exposes students to social media marketing strategies. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

MKT 110	Principles of Marketing OR		
MMS 190	Broadcast Promotions		3.0
MMS 134	Media Writing OR		
ENG 105	Composition I		3.0
MMS 204	New Media Production		3.0
MMS 202	Social Media Marketing		3.0
MMS 216	Social Media Capstone		4.0
	Credits		16.0

16.0 Total Semester Hours Required

Sociology

The Sociology program of study prepares students to transfer to sociology departments and programs at four-year colleges and universities. The curriculum is designed to teach students the fundamentals of sociological principles, analysis and research skills. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
SOC 110	*Introduction to Sociology		3.0
SPC 112	Public Speaking		3.0
	Humanities Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
SOC 115	Social Problems		3.0
	Mathematics/Science Elective		3.0
	Humanities Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

Third Semester

	Sociology Elective		3.0
	Humanities Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	General Electives		7.0
	Credits	16.0	17.0

Fourth Semester

	Sociology Elective		3.0
	Lab Science Requirement		4.0
	General Electives		11.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Must include 12 credits from the following:

SOC 110 Introduction to Sociology 3
 SOC 115 Social Problems 3
 SOC 120 Marriage and Family 3
 SOC 200 Minority Group Relations 3
 SOC 210 Men, Women and Society 3
 SOC 230 Juvenile Delinquency 3
 SOC 235 Gangs 3
 SOC 240 Criminology 3
 SOC 250 Sociology of Deviance 3

Other Courses Recommended to Meet Program Requirements:

HIS 151 United States History to 1877 3
 HIS 152 United States History since 1877 3
 POL 111 American National Government 3
 POL 112 American State and Local Government 3
 PSY 111 Introduction to Psychology 3
 PSY 241 Abnormal Psychology 3
 PSY 251 Social Psychology 3
 PSY 293 Issues in Psychology 3

Surgical Technology

The Surgical Technology program of study is designed to prepare students to become skilled operating room technicians. The program prepares students to practice under the supervision of a physician or registered nurse and to function as a member of the surgical team. Sterile techniques, operative procedures, anatomy and physiology, and microbiology, as applied to surgery, are studied. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 168	Human Anatomy and Physiology I	4.0
HSC 167	Sterile Processing Instrumentation	5.0
HSC 113	Medical Terminology	2.0
HSC 164	Sterile Processing Techniques	5.0
	Credits	16.0

Second Semester

PSY 121	Developmental Psychology	3.0
SUR 420	Pharmacology for the Surgical Technologist	2.0
SPC 122	Interpersonal Communication	3.0
BIO 173	Human Anatomy and Physiology II	4.0
ENG 105	Composition I	3.0
SUR 135	Ethics, Legal Issues and Professionalism in Surgical Technology	2.0
	Credits	17.0

Third Semester

SUR 130	Introduction to Surgical Technology	2.0
SUR 141	Introduction to Basic Surgical Principles	6.0
BIO 186	Microbiology	4.0
MGT 195	Workplace Empowerment	3.0
	Credits	15.0

Fourth Semester

SUR 215	Basic Surgical Principles	6.0
SUR 221	Surgical Technology	10.0
	Credits	16.0

Summer

SUR 320	Advanced Surgical Technology	7.0
	Credits	7.0

71.0 Total Semester Hours Required

Students must earn a "C" or higher in all SUR, BIO, and HSC courses in order to graduate.

Sustainable Energy Technology

The Sustainable Energy Technology program of study is designed to provide the skills and knowledge required for entry-level careers in the manufacture, installation and maintenance of renewable energy systems, with a focus on wind and solar energy systems. Students study core aspects of renewable energy technology and choose to focus on either wind or solar technologies. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls	2.0
ELT 331	Circuit Analysis I	4.0
ELT 332	Circuit Analysis I Lab	1.0
IND 109	Equipment Safety and Operation	3.0
IND 117	Industrial Engineering Technology Orientation	3.0
MAT 743	Technical Math *	3.0
	Credits	16.0

Second Semester

BUS 280	Fundamentals of Lean Process Improvement	3.0
SER 120	Introduction to Renewable Energy	3.0
SER 130	Introduction to Solar Energy	3.0
SER 135	Introduction to Alternative Fuels	3.0
WTT 103	Introduction to Wind Energy	3.0
WTT 143	Mechanical Power Transmission	3.0
	Credits	18.0

Summer

ENG 105	Composition I OR		
ENG 110	Writing For The Workplace	3.0	
	Technical Elective **	2.0	5.0
	Credits	5.0	8.0

Third Semester

SER 118	Introduction to Sustainable Construction	3.0
SER 121	Introduction to Biomass Energy Resources	3.0
SER 145	Geothermal Systems	3.0
SER 190	Advanced Sustainable Energy	3.0
	Social Science/Humanities Elective	3.0
	Credits	15.0

Fourth Semester

MGT 101	Principles of Management	3.0	
MGT 195	Workplace Empowerment	3.0	
SER 195	Advanced Sustainable Energy II	3.0	
	Humanities Elective	3.0	
	Technical Elective **	2.0	5.0
	Credits	14.0	17.0

68.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Electives must be selected from the following:

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 ELT 250 and 251 Programming Logic Controller and Programming Logic Controller Lab 5
 NET 790 PC Support I 3
 SER 805 Sustainable Energy Internship 2
 SER 905 Sustainable Energy Project 2
 WEL 149 Arc Welding 3

Sustainable Energy Technology Certificate

The Sustainable Energy Technology Certificate program of study is designed to provide the basic skills and knowledge required for entry-level careers in the manufacture, installation and maintenance of renewable energy systems. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

BUS	280	Fundamentals of Lean Process Improvement	3.0
SER	120	Introduction to Renewable Energy	3.0
SER	130	Introduction to Solar Energy	3.0
SER	135	Introduction to Alternative Fuels	3.0
WTT	103	Introduction to Wind Energy	3.0
WTT	143	Mechanical Power Transmission	3.0
		Credits	18.0

18.0 Total Semester Hours Required

Theatre

The Theatre program of study prepares students to transfer to four-year colleges and universities in order to pursue undergraduate majors in theatre, speech or related fields in education. Students who complete the degree have both a sound theoretical background and a varied practical experience in the theatrical arts with an improvement in interpersonal and public performance skills in communication. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

DRA	101	*Introduction to Theatre	3.0
DRA	165	*Stagecraft	3.0
DRA	130	*Acting I	3.0
DRA	180	*Theatre Lab I	1.0
ENG	105	Composition I	3.0
MAT	157	Statistics	4.0
		Credits	17.0

Second Semester

DRA	132	*Acting II	3.0
DRA	181	*Theatre Lab II	1.0
DRA	179	*Stage Make-Up	3.0
ENG	106	Composition II	3.0
		Social Science Elective	3.0
		Mathematics/Science Elective	3.0
		Credits	16.0

Third Semester

DRA	125	*Introduction to Play Analysis	3.0
DRA	178	*Stage Costume	3.0
DRA	280	*Theatre Lab III	1.0
SPC	112	Public Speaking OR	
SPC	122	Interpersonal Communication	3.0
		Social Science Elective	3.0
		Credits	13.0

Fourth Semester

DRA	930	*Devised Theatre Projects	3.0
DRA	281	*Theatre Lab IV	1.0
		*Theatre Elective	3.0
		Lab Science Requirement	4.0
		Social Science Elective	3.0
		Credits	14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

****Theatre Electives must be selected from the following:**

DRA 126 Movement for the Actor 3
DRA 154 Theatre Production 3

Veterinary Technology

The Veterinary Technology program of study prepares students to become entry-level veterinary technicians who work under the direct supervision of a licensed veterinarian for any purpose except diagnosis, prescription, or surgery. Graduates can find employment in many sectors including small and large private animal practice, animal shelters and humane societies, clinical laboratories, education, zoos, government, research, and the biomedical industry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. To become a registered professional, a graduate must successfully complete the Veterinary Technician National Exam (VTNE) and the Iowa Veterinary Technician Examination to become a Registered Veterinary Technician (RVT). This program is accredited by the American Veterinary Medical Association (AVMA) under the guidelines set forth by the accrediting body.

Program Prerequisite: A college-level chemistry course of at least three semester hours OR a high school-level chemistry course of at least one semester in length.

General Education Courses that must be completed prior to the first semester of Veterinary Technology:

BIO 112 General Biology I 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AGV 100	Introduction to Veterinary Technology		2.0
AGV 110	Principles of Veterinary Technology I		3.0
AGV 120	Veterinary Medical Terminology		1.0
AGV 122	Principles of Sanitation		3.0
AGV 104	Veterinary Technology Anatomy and Physiology I		3.0
AGV 205	Kennel Management and Animal Care I		1.0
	Credits		13.0

Second Semester

AGV 115	Principles of Veterinary Technology II		3.0
AGV 108	Veterinary Technology Anatomy and Physiology II		3.0
AGV 135	Clinical Pathology Lab Techniques I		3.0
AGV 140	Veterinary Pharmacology		3.0
BIO 186	Microbiology		4.0
AGV 207	Kennel Management and Animal Care II		1.0
	Credits		17.0

Summer

AGV 142	Mathematics for Veterinary Technicians		3.0
AGV 145	Animal Nutrition		3.0
AGV 805	Veterinary Technology Internship I		2.0
ENG 105	Composition I		3.0
	Credits		11.0

Third Semester

AGV 147	Large Animal Care		4.0
AGV 170	Veterinary Anesthesiology		3.0
AGV 136	Clinical Pathology Lab Techniques II		4.0
AGV 150	Office Procedures for Veterinary Technicians		3.0
	Social Science/Humanities Elective **		3.0
AGV 209	Kennel Management and Animal Care III		1.0
	Credits		18.0

Fourth Semester

AGV 149	Avian, Exotic and Lab Animal Care		3.0
AGV 182	Diagnostic Imaging		3.0
AGV 806	Veterinary Technology Internship II		3.0
AGV 185	Veterinary Surgical Assisting		3.0
MGT 195	Workplace Empowerment		3.0
AGV 211	Kennel Management and Animal Care IV		1.0
	Credits		16.0

79.0 Total Semester Hours Required

****Social Science/Humanities Elective must be selected from the following:**

ECN 120 Principles of Macroeconomics 3
 ECN 130 Principles of Microeconomics 3
 PHI 105 Introduction to Ethics 3
 PHI 142 Ethics in Business 3
 PSY 111 Introduction to Psychology 3
 PSY 121 Developmental Psychology 3
 SOC 110 Introduction to Sociology 3
 SOC 120 Marriage and Family 3

Students must earn a "C" or higher in all required courses in order to graduate.

Welding Certificate

The Welding Certificate prepares students to enter into the industry as beginning production, maintenance, or job shop welders. Students are trained in the latest techniques in fabrication of materials by welding processes. The Welding Certificate is designed to teach fundamental techniques and principles. The pathway also provides for an overview of related topics, such as metallurgy and fabrication, layout, estimating and repair. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

WEL 228	Introduction to Welding, Safety, & Health of Workers		1.0
WEL 233	Print Reading & welding Symbol Interpretations		3.0
WEL 149	Arc Welding		3.0
WEL 256	Gas Metal Arc Welding		4.5
WEL 259	Oxy-Acetylene Arc Welding		1.0
WEL 192	Gas Tungsten Arc Welding		4.0
	Credits		16.5

16.5 Total Semester Hours Required