

2013-2014

Course Catalog



The TECHNICAL COLLEGE
MANHATTAN AREA TECHNICAL COLLEGE

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Manhattan, Kansas 66503
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Index

Directory	3	Library	21
Academic Calendar	4	Services for Special Needs Students	21
About MATC	5	Transcripts	21
Admissions	7	Campus-Wide Safety and Security	21
Academic Information	8	Academic Programs.....	23
Academic Programs.....	8	Advanced Biotechnology Certificate	24
Associate of Applied Science Degree	8	Air Conditioning and Refrigeration.....	25
Associate of Applied Science in Technical Studies	9	Automotive Collision Repair	26
Technical Certificates	10	Automotive Technology	27
Requirements for Graduation	10	Building Trades	28
Advanced Standing.....	10	Business Administration	29
Advanced Placement.....	10	Accounting	30
Articulation/ Transfer of Credit	10	Business Administrative Technology.....	30
Concurrent Enrollment.....	11	Medical Office Administration	31
Credit by Examination	11	Computer-Aided Drafting Technology.....	32
Distance Education/Online Learning	11	Dental Hygiene.....	33
System Requirements to View MATC Courses	11	Electric Power and Distribution.....	34
Credit for Military Training	12	Facilities Maintenance Technology	35
Prior Learning Credit	12	Information and Network Technology.....	36
Transfer to Other Institutions	12	Medical Laboratory Technology	37
Academic Honesty.....	12	Nursing.....	38
Attendance.....	13	Associate Degree Nursing	38
Attendance Policy for Online/Distance Learning	13	Practical Nursing... ..	39
Drop/Withdrawal Policy	13	Surgical Technology.....	40
Readmission Policy	13	Welding	41
Student Grievance Appeal Policy	14	Course Descriptions.....	42
Tuition and Fees.....	14	Accounting.....	42
Tuition and Fees Refund Policy	14	Air Conditioning and Refrigeration.....	42
Military-Related Refunds	14	Athletics.....	43
Title IV Funds Refund Policy.....	14	Automotive Collision Repair	43
Continuing Education and Workforce Development	15	Automotive Technology	43
Financial Aid	17	Biotechnology.....	44
Satisfactory Academic Progress	17	Building Trades	45
Title IV Federal Aid	18	Business Administration	46
Scholarships	18	Computer Software	47
Other Resources.....	19	Computer-Aided Drafting Technology.....	47
Agencies	19	Continuing Education/Workforce Development	48
Student Support Services.....	20	Dental Hygiene	49
National Technical Honor Society.....	20	Electric Power & Distribution	51
Student Government Organization	20	Facilities Maintenance Technology	51
SkillsUSA	20	General Education.....	52
Phi Theta Kappa.....	20	Information & Network Technology.....	54
Accident Insurance	20	Medical Laboratory Technology	55
Counseling	20	Nursing	56
Job Placement Assistance	20	Surgical Technology.....	57
Learning Resource Center	21	Welding Technology	58
		Administration, Staff, & Faculty	59

Directory

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Academic Calendar

Note: This calendar is accurate at the date of printing. MATC reserves the right to modify the calendar as necessary. Students, prospective students, and employees will be notified of calendar changes as soon as possible.

2013 Fall Semester

July 11	A.D.N. Fall Semester classes begin for Fall 2013 class
Aug 13	Book vouchers available for financial aid students (only if financial aid finalized by June 15 th)
Aug 20-23	Welcome Week
Aug 19	Orientation for General Education/Non Program Students Only
Aug 21	Fall Semester Begins
Aug 28	Last Day to withdraw and receive a 100% refund
Sept 2	CAMPUS CLOSED
Sept 12	Last day to withdraw and receive 50% refund
Sept 18	Financial aid checks available
Oct 3	Open House
Oct 15	Last day to adjust financial aid for the fall semester
Oct 18	Last day to withdraw and receive a W
Nov 14	Scholarship award dinner
Nov 15-29	Thanksgiving Break – No day or evening classes
Nov 27-29	CAMPUS CLOSED
Dec 2	Classes resume
Dec 2	Financial aid paperwork must be completed to receive book voucher for spring semester
Dec 16-20	Final Exams
Dec 19	Commencement
Dec 24-31	CAMPUS CLOSED

2014 Spring Semester

Jan 1	CAMPUS CLOSED
Jan 14	Book vouchers available for financial aid students (only if financial aid finalized by December 2 nd)
Jan 17	Convocation Day (for new program students)
Jan 20	CAMPUS CLOSED
Jan 21	Spring Semester begins
Jan 28	Last day to withdraw and receive 100% refund
Feb 10	Last day to withdraw and receive 50% refund
Feb 13	Financial aid checks available
March 14	Last day to adjust financial aid for the fall semester
March 26	Last day to withdraw and receive a W
March 17-21	Spring Break – No day or evening classes
March 21	CAMPUS CLOSED
March 24	Classes Resume
April 3	Scholarship award dinner
April 17	Open House
May 12-16	Final Exams
May 15	Financial aid paperwork must be completed to receive book voucher for summer semester
May 15	Commencement
May 26	CAMPUS CLOSED
June 14	A.D.N. Spring semester ends for Jan 2014 students

2014 Summer Semester (June 2 – July 25)

June 5	Last day to withdraw and receive a 100% refund
June 12	Last day to withdraw and receive a 50% refund
June 26	Last day to withdraw and receive a W
July 4	CAMPUS CLOSED

About MATC

Mission Statement

Manhattan Area Technical College provides quality technical and general education to prepare individuals to pursue technologically advanced careers and lead productive lives in a dynamic and diverse global environment.

Vision Statement

As a leader in technical education, Manhattan Area Technical College will enhance student-centered learning and services to business, industry, and community members.

Values

In making decisions to advance the mission of Manhattan Area Technical College, the faculty and staff value:

- Integrity – being accountable for our actions
- Student-centered instruction – addressing the needs of our students
- Relevant program content – applying industry recommendations
- Quality performance – striving for excellence

MATC Core Outcomes

Core outcomes at Manhattan Area Technical College are designed to enhance students' critical thinking, problem solving and communication skills in their academic courses as well as in their technical courses. The MATC core outcomes are as follows:

- M Maximizing professional and personal skills
- A Attaining critical thinking and problem solving skills
- T Training in discipline-specific technology skills
- C Creating competent communication skills

Objectives

Offering associate of applied science degrees and technical certificates upon completion of programs and courses in technical fields to meet student, employer, and community needs.

- Complementing technical instruction with general education courses emphasizing critical thinking, problem solving, and communication skills.
- Creating opportunities for secondary students in technical education through articulation agreements and concurrent credit.
- Providing student services to include counseling, financial aid, skill enhancement and assessment, employability preparation, and student-directed activities.

- Assessing student performance and outcomes to enhance learning.
- Allocating resources to ensure a safe, accessible, and student-friendly learning environment.
- Monitoring integrity through interaction with program advisory councils, a general advisory council, and evaluation by approving agencies.
- Serving as a valued community leader and partner in the educational, economic, and workforce development of our service area.

Philosophy of Assessment

Manhattan Area Technical College's faculty and staff are committed to a comprehensive institutional assessment program that promotes continuous improvement in all aspects of programs and services critical to the success of the College. Convinced that learning-oriented effectiveness is of primary importance in meeting the institution's mission, the faculty has placed an emphasis on the assessment of student learning.

Manhattan Area Technical College also recognizes the importance of assessment and improvement activities related to organizational structure. These activities, designed to complement the assessment of student learning, enhance the planning and implementation of strategic initiatives as well as the operational functions of the College, are executed as part of a comprehensive plan.

Demonstrating ongoing institutional improvement is necessary to ensure the continuing success of the College. MATC is strengthened by its ability to respond quickly and effectively to changing student and stakeholder needs through a systematic and well-practiced methodology involving assessment, evaluation, and action to address the identified opportunities for improvement. This agility allows the College to compete in an educational arena where prospective students have a myriad of options.

In addition, as legislative bodies and accrediting organizations search for ways to enhance accountability among educational institutions, the documentation produced by this ongoing improvement process facilitates the reporting required for compliance with these regulatory and accrediting agencies.

History of Manhattan Area Technical College

In 1965 the Kansas State Board of Education established this institution under authority granted by Kansas Statutes Annotated 72-4412 and named it the Manhattan Area Vocational-Technical School. Educational programs were initially offered on the campus of Manhattan High School. MATC's current campus, located at 3136 Dickens Avenue in Manhattan, Kansas, was occupied in 1967.

Through the years, the increasing influence of advancing technology in business and industry, health and emergency services, and government has made strong technical skills a requirement in most professions. Consequently, the training at MATC is now referred to as technical education.

In that spirit, the School was renamed in 1992 as Manhattan Area Technical Center. Legislation passed in 1994, Kansas Senate Bill 586, amended K.S.A. 72-4412, and provided the opportunity for technical schools to apply for conversion to technical colleges. In 1996, Governor Bill Graves signed into law Kansas House Bill 2606, which amended K.S.A. 72-4412, and designated the School as Manhattan Area Technical College. On July 1, 2004, Manhattan Area Technical College separated from USD 383 to become an independent entity.

Service Territory

Since its establishment, Manhattan Area Technical College has primarily served an area of Kansas that includes citizens and communities in ten counties including Clay, Dickinson, Geary, Marshall, Morris, Nemaha, Pottawatomie, Riley, Wabaunsee, and Washington. MATC provides advanced education and technical preparation to students from communities all over Kansas as well as other states. The College's immediate service area, from which the Board of Directors is drawn, includes Clay, Dickinson, Geary, Marshall, Pottawatomie, and Riley counties.

Accreditation

Manhattan Area Technical College is accredited with the:

Higher Learning Commission of the
North Central Association of College and Schools
30 North LaSalle Street, Ste. 2400
Chicago, IL 60602-2504
312.263.0456
<http://www.ncahigherlearningcommission.org>.

It is approved with the:

Kansas Board of Regents
1000 SW Jackson, Ste. 520
Topeka, KS 66612-1321
785.296.3421

and the:

U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-0498
800.872.5327
<http://www.ed.gov>

Other program-specific accrediting/approving/certifying agencies are:

Accreditation Commission for Education in Nursing
3343 Peachtree Road, NE, Suite 850
Atlanta, GA 30326
404.975.5000
<http://www.acenursing.org>

Kansas State Board of Nursing
900 SW Jackson, Suite 1051
Topeka, KS 66612
785.296.4929
<http://www.ksbn.org>

U.S. Veterans Administration
5500 E. Kellogg
Wichita, KS 67218-1698
888.442.4551
<http://www.benefits.Va.Gov/wichita>

Kansas Department for Aging and Disability Services
New England Building
503 S. Kansas Avenue
Topeka, KS 66603-3404
785.296.4986
<http://www.kdads.ks.gov/>

National Automotive Technicians Education Foundation
101 Blue Seal Drive, Suite 101
Leesburg, VA 20175
703.669.6650
www.natef.org

National Security Agency (NSA)
9800 Savage Road
Ft. George G. Meade, MD 20755
301.688.6311
<http://www.nsa.gov/>

American Dental Association
Commission on Dental Accreditation
211 East Chicago Avenue
Chicago, IL 60611-2678
800.621.8099
www.ada.org

Organization

Manhattan Area Technical College is a public, independently governed institution of higher education. The nine-member volunteer Board of Director's sole employee is the College's President/CEO. The President of the college is the Chief Executive Officer and reports to the Board of Directors while managing all college operations. The administration reports to the President and assumes the responsibilities of the President in his/her absence. In addition, more than 120 volunteer council members, representing a cross section of business and industry, advise Manhattan Area Technical College faculty and staff.

Admission

Admission to MATC Programs of Study

Persons desiring to attend an MATC academic program must submit a completed application for admission, along with a nonrefundable application fee. **Due to limited class size, applicants are provisionally accepted on a first-applied, first-provisionally accepted basis (see section for programs with additional admissions requirements).** We encourage applicants to visit with an MATC advisor to discuss their options.

All nursing students whose primary language is not English must demonstrate English language proficiency before they can enroll for the first time at Manhattan Area Technical College. Applicants can show English competency by completing the testing explained below. The cost incurred is the sole responsibility of the individual.

Tests used to measure English proficiency, together with required minimum scores, are: **Test of English as a Foreign Language (TOEFL)**=490 (paper-based) or 163 (computer based) and **Test of Spoken English (TSE)**=45.

Registration forms for testing may be obtained from Academic Assistance Room 101, Holton Hall, Kansas State University, Manhattan, KS 66506. 785.532.6492.

High School Students

High school students attending MATC *full-time* will be enrolled as non-certificate/degree seeking students. They may receive concurrent high school/college credit, which can be applied toward a Manhattan Area Technical College technical certificate/degree following the student's high school graduation. (Part-time enrollments will be considered if program space is available.) Through SB155 (K.S.A. 72-4489), high school students receive a tuition scholarship for technical tiered courses. See a counselor/advisor for more information.

International Students

Manhattan Area Technical College is not authorized by the U.S. Department of Justice to complete Immigration and Naturalization Service paperwork for students seeking admission through a student visa.

Acceptance into MATC Programs

Applicants will receive notification of acceptance into their program of study via mail. Acceptance is provisional, contingent upon the applicant's completion of admissions requirements. Students should reference the program of study for specific admission criteria.

Note: An applicant for nursing licensure in the state of Kansas must "have graduated from a high school accredited by the appropriate legal accrediting agency or obtained the equivalent of a high school education, as determined by the state department of education" (KSA 65-1116 and KSA 65-1116). Applicants to the nursing program should be aware that certain criminal convictions would deny or restrict access to a Kansas nursing license. Specific information about these convictions is identified in Kansas law (KSA 65-1120). Please check with the Manhattan Area Technical College Division Chair of Nursing and Allied Health (785.320.4507) or the Kansas State Board of Nursing (785.296.4325) if you have questions.

New Student Orientation

Provisionally accepted students attend New Student Orientation approximately two months prior to the class start date. At orientation, faculty and staff provide vital information that will help students make a successful transition to Manhattan Area Technical College, including:

- MATC Policies and Procedures
- Program Course Schedules
- Performance Expectations
- Tools/Equipment/Uniforms/Textbooks
- Financial Aid/Tuition Information

Enrollment

Students may not be enrolled into courses at MATC without providing their high school and post-secondary education transcripts. For further questions, students may consult an MATC academic advisor.

Assessment of Incoming Undergraduates

Students must **qualify** to enroll in writing (English Composition I or Technical Writing) and math (Technical Math I, Technical Math II, Beginning, Intermediate, and College Algebra) through ACT or COMPASS scores. The scores on these assessments determine placement in English and Math courses. Students who have undergone COMPASS testing or ACT testing within three years of their Manhattan Area Technical College enrollment date may use those scores for evaluation to determine their placement in general education courses. An official copy of those scores must be sent to MATC to be considered.

Academic

Nationally, workplace technology has advanced exponentially and has impacted almost every industry. Thus, Manhattan Area Technical College programs are designed to prepare students to enter the workforce in a relatively short period of time with the technical skills needed to gain satisfactory employment in their chosen discipline. Technical education is a time-efficient, cost-effective means of achieving career education. With the education and experience they gain, graduates have the potential to open doors of opportunity that otherwise might have been inaccessible. The ultimate goal of each technical program, course, or seminar is successful employment for graduates, as well as the creation of life-long learners.

Academic Programs

Sixteen programs of study are available to develop competent, responsible, and motivated individuals.

- Advanced Biotechnology
- Air Conditioning and Refrigeration
- Automotive Collision Repair
- Automotive Technology
- Building Trades
- Business Administration
- Computer-Aided Drafting Technology
- Dental Hygiene
- Electric Power & Distribution
- Facilities Maintenance Technology
- Information & Network Technology
- Medical Laboratory Technology
- Practical Nursing
- Associate Degree Nursing
- Surgical Technology
- Welding Technology

Each program offers focused preparation in specific skills aimed at preparing graduates to pursue technologically advanced careers in the changing workplace. Successful completion of a program of study is recognized by the granting of a technical certificate or an associate of applied science degree.

Degrees and technical certificates will be conferred in the name of the Manhattan Area Technical College Board of Directors to students successfully completing the required curriculum. Students finishing short-term courses will be granted written evidence of successful completion. Students not finishing a program of study may, upon written request, be issued a transcript of courses completed.

Associate of Applied Science Degree

The Associate of Applied Science degree is designed primarily to prepare students for employment in an occupation or closely related cluster of occupations. An Associate of Applied Science degree will be awarded upon satisfactory completion of a program of study of not less than sixty-two (62) credit hours, including the general education requirements that have been designated for each program of study. All A.A.S. degree awards must have a minimum of 15 credit hours of general education including 3 credit hours of math and 3 credit hours of communications.

General Education Courses – 15 Credit Hours

- Communications (3 credit hours)
 - COM 105 English Composition I
 - COM 106 English Composition II
 - COM 110 Technical Writing
- Math (3 credit hours)
 - MAT 109 Technical Mathematics I
 - MAT 110 Intermediate Algebra
 - MAT 135 College Algebra
 - MAT 145 Elementary Statistics
- General Education Electives (9 credit hours)
 - BSC 110 Biology
 - BSC 125 Anatomy and Physiology
 - BSC 205 Microbiology
 - BUS 125 Business Communication
 - CHM 100 Physical Science
 - CHM 110 Chemistry I
 - CIS 100 Software Applications
 - COM 115 Public Speaking
 - CRT 100 Principles of Information Assurance
 - NTR 105 Nutrition
 - PSY 100 General Psychology
 - PSY 125 Human Growth and Development
 - SOC 100 Introduction to Sociology
 - SOC 200 Marriage and Family

NOTE: MAT 099 Workplace Mathematics and COM 100 Workplace Writing do not meet the requirements for either a Certificate or an Associate of Applied Science degree.

General education requirements are specific to programs of study; refer to the specific program of study for a complete listing of all general education requirements.

MATC course work will meet the technical specialty requirements; general education requirements can be met through completion of specified course work at MATC or from a regionally accredited college or university. The general education requirement may be completed prior to enrollment at MATC, concurrent with technical specialty requirements, or following completion of the technical requirements. **Only course work with a grade of C or higher may be transferred.**

Students who have completed a technical program certificate and desire to complete an A.A.S. degree must consult with the Vice President of Student Services and/or an MATC advisor. A student who plans to complete an A.A.S. degree must have attained a high school diploma or GED prior to the awarding of the degree and maintain a minimum cumulative GPA of 2.0. While the A.A.S. degree is designed to enhance employment opportunities, articulation agreements have been established with four-year universities to recognize this degree for transfer of credits. See the MATC counselor for more information about these transfer opportunities as well as degree planning assistance. Transfer of credit is at the discretion of the receiving institution; MATC does not guarantee transfer of credit.

Manhattan Area Technical College provides the Associate of Applied Science degree in the following disciplines:

- Air Conditioning and Refrigeration
- Automotive Collision Repair
- Automotive Technology
- Building Trades
- Business Administration
- Computer-Aided Drafting Technology
- Dental Hygiene
- Electric Power and Distribution
- Facilities Maintenance Technology
- Information and Network Technology
- Medical Laboratory Technology
- Nursing
- Welding Technology

Associate of Applied Science in Technical Studies

The Associate of Applied Science in Technical Studies degree option allows students to design an individualized program of study in order to fulfill a unique career goal that cannot be met through any single technology program offered by the college. The Associate of Applied Science in Technical Studies degree will be awarded upon satisfactory completion of a minimum of 15 credit hours from at least two technical disciplines and develop a coherent technical program with a technical focus directly related to the student's career objective. Students may choose to major in a technical program of study with a minimum of 30 credit hours and add 15 credit hours from another program of study, totaling a minimum of 62 credit hours not to exceed 68 credit hours. This degree is two years in length and utilizes previously approved courses in Kansas Board of Regents approved programs.

General Education courses – 15 Credit Hours

- Communications (3 credit hours)
 - COM 105 English Composition I
 - COM 106 English Composition II
 - COM 110 Technical Writing
- Math (3 credit hours)
 - MAT 109 Technical Mathematics II
 - MAT 110 Intermediate Algebra
 - MAT 135 College Algebra
 - MAT 145 Elementary Statistics
- General Education Electives (9 credit hours)
 - BSC 110 Biology
 - BSC 125 Anatomy and Physiology
 - BSC 205 Microbiology
 - BUS 125 Business Communication
 - CHM 100 Physical Science
 - CHM 110 Chemistry I
 - CIS 100 Software Applications
 - COM 115 Public Speaking
 - CRT 100 Principles of Information Assurance
 - NTR 105 Nutrition
 - PSY 100 General Psychology
 - PSY 125 Human Growth and Development
 - SOC 100 Introduction to Sociology
 - SOC 200 Marriage and Family

Technical Specialty 1 (15 credit hours minimum)

Technical Specialty 2 (15 credit hours minimum)

See programs of study for identified courses for a technical minor.

Students choosing the A.A.S. in Technical Studies degree option will work with their respective advisor to determine the appropriate coursework to complete. The Associate of Applied Science Degree is designed for employment purposes, and it should not be assumed that the degree or the courses in the degree can be transferred to another institution. Students to whom transfer is important should get assurances in writing in advance from the institution to which they wish to transfer.

Technical Certificates

A technical certificate is awarded to students who have successfully completed the necessary program courses and program-specific competencies with a cumulative grade point average of 2.0 or higher. Eligibility for a technical certificate requires students to account for all mandatory technical and general education courses within five (5) years of the date of their leaving prior to completion of the technical program. The Vice President of Instructional Services must approve any exceptions.

Manhattan Area Technical College provides technical certificates in the following disciplines:

- Advanced Biotechnology
- Air Conditioning and Refrigeration
- Automotive Collision Repair
- Building Trades
- Business Administration
 - Accounting
 - Business Administrative Technology
 - Medical Office Administration
- Electric Power and Distribution
- Facilities Maintenance Technology
- Practical Nursing
- Surgical Technology (in partnership with Seward County Community College)
- Welding Technology

Technical Certificate/Degree Requirements for Graduation

Students who intend to graduate with a technical certificate or associate degree must apply for permission to graduate.

- Complete the Application for Graduation form available in the MATC office or online.
- Satisfactorily complete all course work for technical certificate/degree. (Satisfactory completion is defined within each course syllabus.)
- Achieve a cumulative GPA of 2.0 or higher.
- If applying for Associate of Applied Science degree, provide an official transcript verifying high school graduation or General Education Development (GED) program completion.
- Provide official transcripts verifying transfer courses from regionally accredited colleges and universities.
- Fulfill all financial obligations to Manhattan Area Technical College.

Advanced Standing

Credit may be given for course work completed at other institutions and, in some situations, for specific practical experience. Advanced standing in programs of study is determined on an individual basis by Manhattan Area Technical College program instructors and administration.

Advanced Placement

The Advanced Placement test is one way to earn college credit by examination. These tests are given by the College Entrance Examination Board (CEEB) in May of the junior or senior years in high schools offering advanced placement courses.

Students who have completed any of the following CEEB Advanced placement tests should have the Educational Testing Service (ETS) forward an official report of their scores to the Registrar's Office in order to receive credit. If students did not originally have scores sent to MATC, they must have ETS forward a copy of their scores to the Registrar's Office. To order reports students must provide ETS with the year the Advanced Placement test was taken, subject of the exam, birth date or Social Security number, and the required fee. Requests should be sent to: Advanced Placement Program, PO Box 6671, Princeton, NJ 08541-6671.

When calculating grades from the Advanced Placement tests, scores of 5, 4, or 3 are granted as indicated. No credit is granted for scores of 2 or 1. If the letter grade is awarded, it will become part of the student's GPA at MATC. Advanced Placement courses can be used toward MATC's General Education requirements.

The following list of course equivalencies, credit hours, and grades shown indicate MATC's acceptance policy only. Other institutions may interpret recommendations differently.

AP Course	AP Score	MATC Course	MATC Cr. Hrs.	Grade
Biology	5	Biology	5	A
	4	Biology	5	Cr
Chemistry	5	Chemistry I	5	A
	4	Chemistry I	5	B
	3	Chemistry I	5	Cr
English Composition	5	English Comp I	3	A
	4	English Comp I	3	A
	3	English Comp I	3	B
Psychology	5	Gen. Psych.	3	A
	4	Gen. Psych.	3	Cr

Articulation/Transfer of Credit

Undergraduate students may transfer credit from other institutions of higher education that are accredited by a regional accrediting agency recognized by the U.S. Department of Education. Only course work with a grade of C or higher may be transferred. **Note:** Before enrolling in courses through another college or university, call MATC Student Services personnel (785.587.2800) to determine if the class(es) will meet MATC's transfer criteria.

Students may seek award of credit received from a secondary institution that has in place a current Articulation Agreement with Manhattan Area Technical College in the students' intended program of study. Articulated credit refers to credit earned from a secondary (high school) course that directly corresponds to a course within a program of study that leads to attainment of a technical skill proficiency, industry-recognized credential, certificate, or associate of applied science degree. Students seeking transfer of credit or award of articulated credit must meet the same admissions requirements as all Manhattan Area Technical College students.

Transcription by Manhattan Area Technical College of credit from another institution will require the student to:

- Have an **official** transcript from the secondary institution or institution of higher education on file with MATC (student-issued transcripts are not acceptable);
- Have a C or higher in all classes being considered for transfer or award of credit;
- Students are encouraged to visit with the Vice President of Student Services to determine the transferability of courses. Only those courses that apply directly to the students' program of study will be transcribed. The transfer of credit to other schools is entirely up to the receiving institution; MATC does not guarantee credit transfer.

Concurrent Enrollment

Students who are attending another educational institution (high school, community college, or university) while concurrently enrolled in Manhattan Area Technical College courses should be aware of that institution's policies and procedures regarding student enrollment and attendance. The student must meet admissions and enrollment guidelines provided by that institution.

High school juniors and seniors who enroll in technical courses will receive a tuition scholarship (K.S.A. 72-4417(a)). See an MATC Admissions Representative for more information.

Credit by Examination

Students who have knowledge or experience in an area paralleling instruction in an MATC class may apply for credit by examination for any class to a maximum of nine (9) hours of credit by examination per transcript. This examination, developed by the program instructor(s), will be comparable to a comprehensive review of the class content and will be administered by either an MATC instructor or administrator.

Online/Blended Learning

MATC has more than one strategy to help students Learn a Living. In an effort to meet student needs, MATC now offers some courses in a variety of formats. The traditional on-campus, face-to-face model is required for completion of our

programs. However, some courses are available strictly online while others are in a blended format. The online courses require all coursework to be completed and submitted through the MATC online learning environment. A blended course offers some face-to-face time in addition to an online component. For example, a few of our science courses require completion of lecture materials online and face-to-face time for completion of the lab requirements.

If online learning sounds as if it may be beneficial to you, please take a minute to consider the facts of online learning.

- Reliable Internet connection and computer system is required.
- Just because the course is online does not make content and coursework requirements easy.
- A high comfort level with technology is essential.
- Time management skills and self-motivation are vital!
- Although you may think you are working through the course based on your schedule, it is mandatory to meet the deadlines established by faculty.
- There is a tremendous amount of content and communication that occurs through the written word.
- Faculty may require that exams be proctored.
- There is an additional fee for enrollment in online or blended courses.

Feel free to contact the Instructional Technology Specialist, 785.320.4564, with additional questions regarding this learning opportunity.

System Requirements to View MATC Courses

In order to view the necessary components of MATC courses, it is vital that the following items be functioning on your computer. Please keep the following information in mind:

- Check with your MATC program regarding specific hardware, software, and app requirements.
- Depending on the course, access to a scanner or scanner app may be required.
- Platform: Windows XP or newer; Mac OS X or higher; Mobile devices as appropriate
- MATC courses are best viewed using Internet Explorer 8 or higher
- Internet Connection: cable or DSL recommended; accessible and reliable connection
- Pay special attention to the document format required for your submitted assignment. For example, document extensions may include .doc, .docx, .rtf, .xls, etc. The document extension determines if the instructor will be able to access and grade your assignment.

The following items or equivalent may need to be available.

Adobe Reader/PDF Reader, Flash Player, and Shockwave Player	The Adobe Reader only allows viewing of PDF files. Follow this link to Adobe: http://www.adobe.com Explore for the 3 downloads: Adobe Reader, Adobe Flash Player, and Adobe Shockwave Player
JAVA	Java is required in order for many applications to function properly. i.e. simulations, games, and utilities Follow this link to Java http://java.com/en/ Look for the free download of Java
QuickTime	QuickTime is required to experience some video media. Follow this link to QuickTime http://www.apple.com/quicktime/download/ Look for the Download Now button
Silverlight Plug - In	Silverlight is required to experience some interactive media tools. Follow this link to Silverlight http://www.microsoft.com/silverlight/ Look for download to get the Silverlight plug-in
Microsoft Office	The preferred assignment formats are offered by Microsoft. If you need to explore the products, please follow the below link. http://office.microsoft.com/en-us/products/?CTT=97 If you choose not to use Microsoft products, please have a conversation with your instructor regarding the formatting options.

Credit for Military Training

MATC recognizes the value of training provided through military service branches and awards appropriate credit that aligns with the College's published courses. The College uses the ACE Military Program to evaluate those courses delivered through the Air Force, Army, Coast Guard, Department of Defense, Navy, and the Marines. For Army veterans, The Army/American Council on Education Registry Transcript System (AARTS) will provide a transcript of ACE credit recommendations for all coursework completed while in service, the military occupational specialties (MOSS) held, and examinations passed.

Prior Learning Credit

Students may seek award of credit for prior learning through Advanced Placement (AP), Education Testing Services (DANTES), College Level Examination Program (CLEP), education credit for training programs, credit by

examination, and Prior Learning Assessment (PLA). For specific information about how to apply for prior learning credit, call MATC Student Services personnel (785.587.2800).

Transfer to Other Institutions

The transfer of Manhattan Area Technical College credit to other colleges is entirely up to the receiving institution. MATC does not guarantee transfer of its credit.

Academic Honesty

Academic honesty at Manhattan Area Technical College is an important part of student success. MATC views academic honesty as an integral part of student development and learning. All MATC students are expected to understand the college's policy on academic honesty as well as how the college defines academic dishonesty.

Academic dishonesty is an action taken by a student that violates the college's policy on academic honesty. MATC defines academic dishonesty as the following:

Cheating

- Giving or receiving unauthorized help on an individual or group assignment, paper, or exam
- Reusing an assignment written for another course without proper authorization
- Taking an exam for another student or having another student take an exam for a student
- Using unauthorized material on an exam
- Altering or fabricating academic data, records, or documents with the use of conventional or electronic devices

Plagiarizing

- Using others' ideas and/or words without correctly acknowledging the source of that information
- Copying someone else's copyrighted material without written permission of the copyright owners
- Taking credit for an assignment or research project done by another student
- Doing work or research for another student

Consequences for students in violation of the MATC Academic Honesty Policy will be at the discretion of faculty and/or administration. Consequences include, but are not limited to:

- Oral or written reprimand
- An "F" or zero points given for the assignment, paper, or exam
- An "F" or zero points given for the course
- Removal from the course and/or program
- Expulsion from the college

Any student accused of academic dishonesty may request written confirmation of the violation and consequence(s). If a claim of academic dishonesty is in dispute, the student may file a grievance, following the Student Grievance Appeal Procedure.

Attendance

Manhattan Area Technical College faculty members are dedicated to students' job-skill and employment preparation and believe that poor attendance may result in incomplete knowledge and skill development. Therefore, department instructors specifically address in their course syllabi the attendance guidelines for students enrolled in their program.

If a student is absent from a class for five (5) consecutive days and has made no contact with any Manhattan Area Technical College faculty/staff member, an instructor may drop the student from the class roster on the sixth consecutive day. (*Note: This does not constitute an official withdrawal as defined in the Drop/Withdrawal policy.*) Any student who is dropped from a class roster due to excessive absenteeism may appeal to the Vice President of Student Services for reinstatement in the class.

Attendance Policy for Online/Blended Courses

MATC faculty is dedicated to students' job-skill and employment preparation and believes that poor attendance may result in incomplete knowledge and skill development. Therefore, in their course syllabus, department instructors specifically address the attendance guidelines for students enrolled in their program.

Working within a 4 week window (or 25% of the course),

- During the first week of the course, the online student must:
 - Log in to MATCOnline;
 - Successfully complete the Computer Usage Online Quiz;
 - Complete the first week of assignments as indicated by the instructor;
 - Students not completing the three criteria will be administratively dropped from the course. The instructor will notify both the student and Student Services that the student has been administratively dropped.
- During the following 3 weeks (or the remaining 25% of the course window), an assignment must be completed each of these 3 weeks.
 - An assignment may be, but is not limited to, any of the following: forum posting, quiz, exam, file upload, email reply to instructor through MATC webmail, project submission, and/or writing assignment.
 - The instructor will choose assignments that are acceptable to meet the requirement.
 - In the event that any of the above requirements are not completed for this course, the instructor will notify the student by MATC webmail and encourage withdrawing from the course. If the withdraw process is not completed by the student, an F will be indicated on the transcript as the final grade for this course.

Drop/Withdrawal Policy

Note: An official withdrawal is the date a completed Course Withdrawal Form is received by the Student Services Department in the main office of Manhattan Area Technical College. A student may officially withdraw from a course with no transcripted notation of enrollment if the Drop/Add form is completed and received by the MATC office by the 10th day of the semester. A grade of W will appear on the student's transcript if the student officially withdraws from a course by the 42nd day of the semester (see the academic calendar for exact dates). If a course has been completed prior to the 44th day of the semester, an earned grade cannot be changed to a W. After the 42nd day the student will receive a transcripted grade based on work completed relevant to the course requirements.

Readmission Policy

A student who withdraws from a program may return to that program without payment of a new application fee if the return is within one year of the date of the student's withdrawal. The student may return at the next equivalent start date on a space available basis. Returning students must pay any outstanding balances prior to readmission and must pay tuition based on the rate at the time of readmission. Any grades previously recorded on the student's transcript will remain on the transcript. A student considering withdrawal should first talk with the MATC Counselor for clarification of options.

A student who is dismissed due to disciplinary action or academic reasons may be re-admitted to the same program contingent on the following: completion of an MATC application form and payment of the application fee; program space availability based on the date of application submission; re-entry within one year of the dismissal date, and/or as stipulated in the terms of dismissal; and payment of all outstanding balances. Returning students will pay tuition based on the rate at the time of readmission. Any grades previously recorded on the student's transcript will remain on the transcript.

NOTE: Any nursing or dental hygiene student who fails to complete any prerequisite or semester coursework with a grade of "C" or higher in all courses will not be allowed to progress in the program and must reapply for a future class. To reapply, the student must complete all application requirements within the timeframe set by the Director of Admissions. Readmission is not guaranteed.

Student Grievance Appeal Procedure

Purpose

The purpose of the Student Grievance Appeal Procedure is to provide an orderly and equitable process to resolve any dispute or difference that might occur between a student and a faculty or staff member about learning activities affecting the student or College policies. The proceedings shall be kept confidential at each level of the procedure. The time limits specified shall be regarded as a maximum; however, the time limits specified may be extended by mutual agreement of the parties involved. Students always have the option of visiting with the MATC Counselor to seek guidance before any grievance action takes place.

Procedure

1. A student with a grievance must first discuss the grievance with the faculty or staff member involved. This discussion must take place within ten (10) school days of the event. A reasonable effort should be made by both parties to resolve the issue during this discussion.
2. If the student feels that the issue was not resolved, he/she may then fill out a Student Grievance Form and present it to the supervisor of the faculty or staff member within five (5) school days of the date the student discussed the grievance with the faculty or staff member. (Students can get the Student Grievance Form from the counselor's office.) The supervisor will evaluate the evidence and render his/her decision in writing within five (5) school days of receiving the student's grievance form.
3. If the student is not satisfied with the outcome, he/she may then present the Student Grievance Form to the President of the college. This action must take place five (5) school days from the date in which the student received the decision from the supervisor of the faculty or staff member. The President will evaluate the evidence and render his/her final decision in writing within five (5) school days of receiving the student's grievance form.

Note: If a nursing student or dental hygiene student is filing the grievance, the grievance form must first go to the Director of the appropriate program prior to going to the Vice President of Instruction or President.

Tuition and Fees

Tuition and fees are due at the beginning of each semester and are determined by the number of credit hours in which a student is enrolled. A student who has not met this obligation within 10 days after the due date may be dismissed from the Manhattan Area Technical College. Dismissal does not apply to students who have financial aid eligibility and plan to use those funds for tuition and fee payment. For those students, payment will be expected from the first financial aid check.

Tuition Refund Policy

Students enrolled in an undergraduate course may be eligible for a refund of tuition upon official withdrawal from MATC. Refunds are calculated based on the day a MATC Drop/Add form is received by the MATC office, not when the student stopped attending class. Failure to attend a class does not constitute official withdrawal. Upon an official withdrawal, tuition refunds will be calculated based on the following guidelines:

- Received by the 6th day of the semester = 100% refund of tuition and fees
- Received by the 10th day of the semester = 80% refund of tuition only
- Received by the 15th day of the semester = 50% refund of tuition only

(see academic calendar for exact dates)

Military-Related Refunds

Any Manhattan Area Technical College student who is serving in the National Guard or Reserves and is called to active duty during an academic term is entitled to a full refund of tuition and fees for any courses for which the student has not received a grade. Any Manhattan Area Technical College student drafted and required to report for active duty during an academic term is entitled to a full refund of tuition and fees for any courses for which the student has not received a grade.

No refund of fees and tuition is due for any classes for which the student is awarded full credit. All refunds are contingent upon verification of status through official military documentation. Any student who volunteers for military service during an academic term will be subject to MATC's non-military refund policy.

Title IV Funds Refund Policy

Undergraduate students receiving Federal Financial Aid who completely withdraw from Manhattan Area Technical College are subject to the Department of Education's Return of Title IV Funds policy which is different from the MATC policy. A copy of the Return of Title IV Funds policy is available from the MATC Financial Aid Office.

Continuing Education & Workforce Development

Continuing Education

Whether you want to learn to earn or learn for fun, or you want to enroll to advance your career or develop your skills, there is a course available. MATC's Continuing Education Department provides expert, friendly instructors dedicated to your success. Descriptions of the courses available are included within the course descriptions.

Workforce Development Center

Manhattan Area Technical College's Workforce Development programs provide individuals with the opportunity to participate in credit and non-credit short-term courses. Workforce Development courses are scheduled throughout the year and are also offered to interested parties (assuming sufficient enrollment) *"Anytime, Anywhere, for Anything."*

The courses are offered in a variety of instructional areas related to community and business and industry needs. Schedules describing these courses are made available on campus and on MATC's website (www.manhattantech.edu) as well as directly to individuals. Schedules are also available to the public in local and area libraries as well as in workforce centers and numerous high traffic areas and retail businesses where community information is accessible.

Enrollment in workforce development courses is provided on a first-come, first-enrolled basis. Employers or public agencies sometimes sponsor individuals. Fulfillment of the requirements of a workforce development course is recognized by a certificate of completion and continuing education units (CEUs).

The *Workforce Development Center* provides several services designed to help employers identify the skills needed for specific jobs, determine the appropriate level for effective performance, and develop customized training programs to bring employees to optimum skill levels for increased business productivity.

Customized Training can be provided by the *Workforce Development Center* to meet employers' precise skill needs. Instruction can be closely targeted to workplace needs using a company's specific applications and can be offered at the business site or at MATC. Depending on the employee's career objectives, instruction can be offered for certification, college credit, or degree track.

Grant Programs through the Kansas Department of Commerce are available to qualifying companies to help with training costs. The *Workforce Development Center* can assist a company in securing training funds from different sources including the Kansas Industrial Retraining (KIR), Kansas Industrial Training (KIT), and Kansas First grants. These grants are available to firms engaged in manufacturing, distribution, service, transportation, and tourism, as well as other areas.

Additional Training Available

Basic Employability Skills Training © (BEST)

BEST© is a soft-skills training program developed in response to employers' concerns. The curriculum addresses critical workplace issues such as:

- Dependability
- Appearance
- Positive Attitude
- Keeping Your Job
- Customer Service
- Effective Communication
- Conflict Resolution
- Ethical Behavior
- Getting a Job

Training is offered regularly through the Manhattan and Junction City Workforce Centers and can be offered by arrangement for any business or group.

Command Spanish ®

Command Spanish® is customized Spanish language instruction for non-Spanish speakers who interact with Spanish speakers in the workplace. No prior knowledge of Spanish is required. Instruction is available for a wide variety of occupations, including:

- Dental
- Medical
- Criminal Justice
- Public Safety
- Education
- Business & Commerce
- Industry & Manufacturing
- Hospitality
- General Interest

Courses are offered periodically at MATC. Command Spanish® training can also be customized for your workplace. Typical training consists of 10-12 hours of instruction. Programs are also available online.

Ed2Go®

Ed2Go® allows students to take courses from the comfort of home or office at times most convenient for the learner. Hundreds of engaging online courses are available for adults covering every topic from SAT Test Preparation to Web Design. Each Ed2Go® course comes equipped with a patient and caring instructor, lively discussions with fellow students, and plenty of practical information that can be put to immediate use. Learn more at www.ed2go.com/matech, or call 785.587.2800, ext. 4558.

LERN

MATC is partnered with the LERN network to offer even more *online* courses and certificate programs. A variety of training opportunities are offered in the areas of business, K-12 teaching, eMarketing and Social Media for Business, Leadership, Health, and Green Workplace. Classes start the first Monday of the month and most courses are offered 4 times a year. An online tutorial is available to students who are new to online learning.

To register, simply use the link below and select the courses that meet your personal and professional needs.

www.yougotclass.org/catalog.cfm/ManhattanTech

Supervisory Skills for the 21st Century

While designed primarily for the first-time supervisor, this training is relevant to anyone who manages employees. Topics include:

- Leadership
- Team Building
- Time Management
- Communication
- Conflict Resolution
- Ethics
- Diversity
- Recognizing and Dealing with Sexual Harassment

This two-day training is offered twice yearly in partnership with KS Department of Commerce and the Junction City and Manhattan Workforce Centers. All materials are provided.

Financial

The Financial Aid staff at Manhattan Area Technical College is dedicated to assisting students with the process of applying for and receiving their financial aid.

The first step in determining eligibility for Title IV Federal Financial Aid (Pell Grant, SEOG Grant, Work Study and Student Loans) is to complete the Free Application for Federal Student Aid (FAFSA). Students can complete the FAFSA electronically at www.fafsa.ed.gov.

MATC recommends completing the FAFSA prior to June 15 (November 15 for the Spring semester) in order to have financial aid available at the beginning of the semester and be eligible for a textbook voucher, if applicable. FAFSA applications received after June 15th may not be processed until after the semester begins and may not be eligible for a textbook voucher. For the results of the FAFSA to be processed by MATC, students must have submitted an admissions application.

For students to be eligible for Title IV aid at MATC they must be:

- Enrolled in a Technical Certificate or Associate of Applied Science degree program
- Enrolled at least half-time (six credit hours)
- A high school graduate or have a GED
- A U.S. citizen or eligible non-citizen
- Registered with Selective Service, if required to do so
- In good standing with previous student loans (students cannot be in default on a federal education loan, or owe a repayment on a federal grant)
- Maintain Satisfactory Academic Progress (2.0 GPA or higher; complete 75% of enrolled classes; and not exceed 150% of credit hours for degree program)

All financial aid, with the exception of Federal Work Study is applied directly to a student's account on a semester basis. After tuition and fees are paid, any remaining credit balance will be returned to the student.

Satisfactory Academic Progress

Federal regulations require that financial aid recipients maintain Satisfactory Academic Progress (SAP) In order to remain eligible for Title IV Federal Financial Aid (Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal College Work Study, Direct Student Loans and Federal Parent Loans).

Satisfactory Academic Progress at MATC requires:

- Cumulative GPA of 2.00 (C average), on a 4.00 scale, or higher for all coursework taken at MATC (including general education courses).
- Completion of at least 75% of attempted credit hours. For example: If a student attempts 15 credit hours but only completes 9 credit hours, he/she will have only completed 60% of the attempted hours and will not meet SAP guidelines.
- Maximum hours attempted at MATC (including general education courses) cannot exceed 150% of the published length of the student's program. For example: Students enrolled in a 40 credit hour technical certificate program may be eligible for Title IV Federal Aid for a maximum of 60 credit hours. Students enrolled in a 62 credit hour associate degree program may be eligible for Title IV Federal Aid for a maximum of 93 credit hours.

At the end of each semester, or when otherwise requested, grades are submitted and Satisfactory Academic Progress is determined. All students not meeting SAP are notified in writing that they are not eligible for Title IV Federal Aid for the next semester. Continued unsatisfactory work may be grounds for dismissal from the program.

Title IV Federal Aid can be reinstated when SAP requirements (listed above) are met or by appeal. In order to appeal, a student must complete the Satisfactory Academic Progress Appeal Form available in the MATC office or at www.manhattantech.edu.

Students who have lost Title IV Federal Aid eligibility may still enroll and pay tuition and fee charges from their own resources.

Title IV Federal Aid

Federal Pell Grant – A need-based grant program for students who have not earned a Bachelor's degree. A student's eligibility is determined by enrollment status and Expected Family Contribution (EFC). The EFC is determined by the completion of the FAFSA. Awards range from \$555-\$5550 per academic year, or as determined by the Department of Education.

Federal Supplemental Educational Opportunity Grant (SEOG) – A need based grant program for students with exceptional financial need. Priority is given to students eligible for Federal Pell Grant. Awards at MATC range between \$100-\$300.

Federal Work Study (FWS) – A program that provides jobs for students with financial need. Students are placed in specific jobs on campus. Students are allowed to work no more than 20 hours per week at \$8.75 per hour. Students are paid according to MATC payroll procedures.

Direct Student Loans – A loan program available to both students and their parents. A dependent student may be eligible to borrow up to \$5500 as a freshman and \$6500 as a sophomore. An independent student may be eligible to borrow up to \$9500 per academic year. For the purpose of Title IV Federal financial aid a student is considered dependent if their parent(s) were required to include their information on the FAFSA. Whether the loan is subsidized or unsubsidized is determined by the MATC Financial Aid office based on the results of the FAFSA, the program cost of attendance, and other aid the student is receiving.

Subsidized Loans – A need-based loan where the interest is paid by the federal government while the student is enrolled at least half. Repayment on this loan also begins six months after the student leaves school or drops below half time enrollment status. For 2013-2014 the interest is a fixed 6.8%.

Unsubsidized Loans – A non need-based loan where the interest is the responsibility of the student from the time the loan is disbursed until it is paid in full. The student has the option of paying the interest as it accrues or capitalizing it on the loan. Repayment of the loan begins six months after the student leaves school or drops below half time. For 2013-2014 the interest rate is a fixed 6.8%.

Parent PLUS Loan – A non need-based loan available to parents and/or step-parents with a good credit history to assist with educational expenses of a dependent student. (For the purpose of Title IV Federal financial aid a student is considered dependent if their parent(s) were required to include their information on the FAFSA.) The interest begins to accrue at the time the loan is disbursed. Repayment of the loan may be deferred until six months after the student leaves school or drops below half time. Repayment is the responsibility of the parent who took out the loan. A parent can apply by contacting the MATC Financial Aid office.

Scholarships

Ernest and Lewis BrAun MATC Merit Scholarship – Each semester, MATC awards \$500 scholarships to those deserving students beginning their program of study. Awards, which are determined according to applicant's academic records and leadership qualities, are designed to recognize those individuals having excelled in their respective pursuits. Applications are available at the program orientation or online at www.matc/forms. Prospective students must have been admitted to MATC prior to being considered for the MATC Merit Scholarship. Application deadlines are announced by the school counselor each semester and are typically due after the 20th day of classes.

Ernest and Lewis BrAun MATC Ambassador Scholarship – Each year, MATC selects up to three students to serve as student Ambassadors for the college. The Ambassadors will represent the College at public functions as well as College functions, i.e. Student Government activities, President's cabinet, Board of Directors meetings, Open House, and any other functions that require student representation. Ambassadors will also become members of the Student Government Organization and represent the students' interests in that regard. Up to three (3) Ambassador Scholarship winners will be awarded a minimum scholarship of \$500.00 per semester (subject to funds as determined by the scholarship committee). Application deadline is the Friday of the third week of April for the Fall scholarships and the last day of November for the Spring scholarship. The scholarship money will be released in payments of \$500.00, once each semester, with the second disbursement contingent upon fulfilling the expectations of the position of Ambassador.

Additional MATC Scholarships – Other scholarship opportunities are available throughout the year. Notification as to the qualifications and requirements for those scholarships will be posted on campus and via student email accounts.

- American Welding Society Foundation National Welding Scholarship Program (Welding)
- Ark Valley Electric Cooperative (Electric Power & Distribution)
- Barbara Teaford Memorial Scholarship (Nursing)
- Brooks Memorial Scholarship
- Bruce Peil Memorial Scholarship (Electric Power & Distribution)
- Epsilon Sigma Alpha-Gamma Lambda Chapter (Nursing)
- Greg Davis Memorial Scholarship (Building Trades)
- Human Resources Management Network Scholarship
- Jeffery Tryon Memorial Scholarship (Electric Power & Distribution)
- Kansas Line Superintendents Association (Electric Power & Distribution)
- Konza Rotary Club Scholarship
- Manhattan Business & Professional Women Organization
- Nicholas Buxton Memorial Scholarship (Electric Power & Distribution)

- Pat and Norma Butler Scholarship (Building Trades)
- Richard Shelley Memorial Scholarship (Electric Power & Distribution)
- Ross Clark Memorial Scholarship (Automotive Technology/Automotive Collision Repair)
- Russ Briggs/BriggsAuto.com Scholarship
- Ruth T Howe Memorial Scholarship (Nursing ADN)
- Westar Energy Scholarship (Electric Power & Distribution)
- Western Cooperative Electric Scholarship (Electric Power & Distribution)

Kansas Board of Regents Scholarships

An application for the following scholarships is available online at http://www.kansasregents.org/scholarships_and_grants.

- **Kansas Ethnic Minority Scholarship** – The Kansas Ethnic Minority Scholarship program is designed to assist financially needy, academically competitive students who are identified as members of any of the following ethnic/racial groups: African American; American Indian or Alaskan Native; Asian or Pacific Islander; or Hispanic.
- **Kansas Nursing Service Scholarship** – The Kansas Nursing Service Scholarship was established to provide financial incentives for students to pursue nursing as a field of study and to practice nursing in Kansas with an emphasis on rural areas. Students must be a Kansas resident, admitted to an eligible nursing program, enrolled full-time, must secure sponsorship of an eligible Kansas medical provider, complete the Free Application for Federal Student Aid, and completed the Financial Aid Sources for Kansas Students form. The award is \$2500 for Practical Nursing and \$3500 for Associate Degree Nursing.
- **Career Technical Workforce Grant** - This \$500 - \$1000 scholarship was established to provide financial assistance to students who enroll in Kansas career technical programs. You must be a Kansas resident, a graduate from an accredited high school or Kansas GED, be accepted for admission to an eligible career technical program at a designated Kansas educational institution. An application is available at MATC, from your high school counselor, or online at http://www.kansasregents.org/scholarships_and_grants.

Other Resources

Veterans Education Benefits – The Kansas Commission on Veteran's Affairs has approved VA benefits for all MATC programs. Veterans, reservists, and eligible dependents requesting benefits must complete the appropriate forms, which are available from the Department of Veterans Affairs at 888.442.4551, or online at www.gibill.va.gov.

Army Emergency Relief Education Programs
(www.aerhq.org)

Global Automotive Aftermarket Symposium
(www.globalsymposium.org)

Hispanic Scholarships
(www.hispanicsscholarship.com)

Sallie Mae Scholarship Program
(www.thesalliemaefund.org)

United Negro College Fund (www.uncf.org)

USA Funds (www.usafunds.org)

Scholarship search sites
(www.fastweb.com, www.scholarships.com)

Community Organizations
(American Legion Auxiliary, Rotary Club, churches, etc.)

Agencies

Heartland Works/WIA – Programs for assistance with educational expenses for low income, single parent, dislocated worker, and dislocated homemaker. To apply contact one of the following offices: Manhattan – 785.539.5691, Junction City – 785.762.8870, other KS locations – 785.234.0552.

Workforce Development Loan Program – Loan forgiveness program for someone currently receiving federal assistance from a Kansas WIA program or student or someone in the household is receiving SRS Temporary Assistance for Families cash assistance any time during the past three years. Applications are available at www.kansasregents.org/financial_aid/awards.html.

SER Corporation – Provides educational assistance for eligible students who have worked in feedlots, farms, ranches, grain elevators, green houses, or have done field work in the last two years and meet certain income guidelines. Applications are available through MATC, or through the SER office in Hays, Kansas, 877.723.4016.

United Tribes of Kansas – Educational assistance programs for students of Native American descent. To apply, contact their office at 785.364.2234.

Student Support Services

National Technical Honor Society

The National Technical Honor Society is an honor organization for students enrolled in career and technical education. The purpose of the organization is to promote the ideals of honesty, service, leadership, and skill development; to reward excellence in workforce education; to develop self-esteem and pride; to encourage students to reach for higher levels of achievement; to promote business and industry's critical work-place values – honesty, responsibility, initiative, teamwork, productivity, leadership, and citizenship; and to champion a stronger, more positive image for workforce education in America. Membership in the society is awarded on a merit basis.

Student Government Organization (SGO)

The Student Government Organization, made up of student representatives from each program of study at Manhattan Area Technical College, acts as a liaison between the student body and administration and faculty, plans activities for students, represents Manhattan Area Technical College at college and community events, and participates in a variety of philanthropic activities. Its primary mission is to sustain a high quality of student life at MATC.

SkillsUSA

SkillsUSA is a national nonprofit student organization that serves students enrolled in career and technical education training programs at our nation's public high schools and colleges. SkillsUSA's mission is to empower its members to become world-class workers and responsible American citizens.

SkillsUSA is an applied method of learning where students practice skills and build self-confidence while helping their schools and communities. SkillsUSA provides experiences in leadership, teamwork, citizenship and character development. Our program emphasizes high ethical standards, superior work skills, lifelong education and pride.

Phi Theta Kappa

Phi Theta Kappa is the official honor society of two-year institutions, and is considered to be the largest honor society in the world. It has been regarded as an honorable organization that promotes service oriented members in the community and at large. Beta Upsilon Kappa, the chapter at MATC, was established in 2012. In order to be eligible for Phi Theta Kappa, students must have a 3.5 GPA with at least 12 credit hours.

Accident Insurance

Despite all precautions, students at Manhattan Area Technical College may become involved in accidents and/or incur injuries related to their attendance and studies at MATC. It is in the best interest of all students that some measure of protection is provided. Therefore, a group accident policy exists that provides coverage for all accidents that occur during the school year on school premises or during College-supervised activities. Payment for protection is included in the application fee. This is a supplemental policy that provides coverage if the student is without personal insurance or if the personal insurance does not cover the cost of the claim. It is important that all accidents, regardless of the severity, be reported to an instructor and an Incident Report be submitted to the administrative office.

Counseling

A Manhattan Area Technical College counselor is available on a walk-in basis or by appointment to assist students with career or academic concerns or with personal interests and concerns. The counselor is also accessible for advice and assistance concerning employability skills such as resume and cover letter preparation, job search organization, and interviewing techniques. Confidentiality: A high value is placed on the confidentiality of information about individual students at Manhattan Area Technical College. If there is a need to share information in student records, the student will first be consulted and asked to sign a form authorizing the transfer of the information. The form specifies both the information to be released as well as to whom and by whom it is to be released. The student may revoke the permission by giving written notice at any time. (Also see the Release of Student Information section.)

Job Placement Assistance

It is the sole responsibility of individual students to secure employment following graduation. To assist students and graduates in their endeavors, Manhattan Area Technical College representatives pursue relationships with employers in business and industry to identify and coordinate employment opportunities for MATC graduates. Efforts are made to recruit prospective employers and arrange on-campus and off-campus interviews. An area is maintained in the MATC Library to provide students and graduates with convenient and continuous access to employment information as well as resources (books, directories, periodicals, and videos) for job-search related activities. Additionally, employment opportunities are posted in program areas and on a job board outside the library on a regular basis.

Learning Resource Center

The Learning Resource Center (LRC) is available to all Technical College students for help with basic reading, writing, math, and computer skills. An open-lab format enables ready access to 13 computer workstations, laser printer, scanner, and fax machine, all of which are available for use by students and graduates. The LRC is also the college tutoring center. Students can receive individual or group assistance with general education courses, study skills, test taking strategies, and specialized short courses in computer usage. Upon request, small group instruction workshops can be formed, and/or students can receive individualized help.

Library

MATC's library supports both general education coursework and program curriculum. MATC students, faculty, and staff have access to print resources, electronic databases, video and audio material, as well as Inter-Library Loan. At the beginning of each semester, new students receive a library orientation over current resources. Separate sessions can be set up for specific instruction, such as database searching, web resource evaluation and material selection. Four computer workstations with Internet access are available for research projects. A pay-as-you-go copy machine/printer and a paper shredder are located in the library for library patron use. MATC Library is a member of the North Central Kansas Library region and the Two Year Kansas College Consortium, which allows students to access resources from other member libraries through Inter-library Loan. Upon request, class presentations and team teaching can be done by the library staff to facilitate class projects and/or students can receive individualized instruction.

Services for Special Needs Students

Faculty and staff at Manhattan Area Technical College are sensitive to the special needs of students with documented physical and/or learning disabilities and will work with them in their pursuit of their educational goals. All students with special needs or disabilities **MUST** provide medical documented proof to Student Services in order for MATC to provide an academic environment that addresses the needs of the disability.

Transcripts

Upon written request, former students or graduates may obtain a transcript at a cost of \$5.00 per request. Transcripts are available 10 days after grades are posted. Transcripts are available for continuing education students as of Fall 1994 and for all workforce development students as of Spring 2004. Transcript request forms are available in the MATC main office or at www.manhattantech.edu. Transcripts released directly to students will be stamped "Issued to Student" and may not be considered "official" transcripts. Students must pay all outstanding debts to Manhattan Area Technical College before their degree/technical certificate and/or transcript will be released. Any release of a Manhattan Area Technical College student transcript will be

approved and documented by the Registrar. Official transcripts or reproductions of official transcripts from other institutions cannot be released to any individual or institution.

Campus-Wide Safety and Security

MATC provides campus security services in the evenings. If you need the assistance of our security guard during an emergency or an escort to your vehicle, call **785-212-1086**. Put this number in your cell phone directory.

GENERAL INSTRUCTIONS

Receiving Emergency Messages: Notification will be sent through the RAVE alert system and public address system if available.

Sounding the Alarm: Anyone may notify emergency services by calling 911 and then calling the front desk at 587-2800 or dialing zero (0) from an on-campus phone.

During an emergency, your sole responsibility is to act quickly and in a pre-determined manner to separate yourselves from potential harm.

The time to provide details, discuss options, and philosophy about procedures is before the need to act arises, and of course afterward to continually improve processes.

Therefore during an emergency you will be given one of three specific commands:

1. Lock-Down
2. Evacuate, or
3. Shelter in Place

The only difference between these commands would be when the words "This is an Exercise" are added to the beginning and end of the command.

With this in mind, it is important to think ahead and imagine how you would react to the command listed above. This includes, of course, how you would protect yourselves as well as those around you, especially your students.

The time to become familiar with evacuation routes, shelter areas, or lock-down procedures is today.

Notification to initiate any of the procedures listed below will be given via a text message alert, the telephone voice system, or by use of a runner, if safe.

LOCKDOWN

A crisis situation may arise when it is prudent to lock MATC buildings while still occupied. The purpose for this action would be to protect students and staff by preventing entrance into building and program areas by person or persons identified as dangerous. Lockdown procedures may be implemented in an event such as a civil disturbance, hostage situation, or person(s) wielding dangerous weapons.

Anyone witnessing a dangerous person has the authority to initiate a lockdown at any time deemed as necessary. Faculty and staff should follow the building lockdown procedures when instructed to do so or immediately in the event of an obvious imminent threat.

While MATC has no authority to prevent students from leaving the campus, all students will be asked to stay and report to safe areas in the event of a crisis.

Imminent Danger

- If you hear gunshots or witness an armed person,
 - Isolate yourself and others from the suspect.
 - Close, lock and barricade doors, close curtains, turn off lights
 - Move to a wall or corner out of sight from the door or window.
 - DO NOT respond to anyone at the door.
 - Ignore all bells and alarms unless otherwise instructed.
 - If in open space, hide to the maximum extent possible – get behind something solid (a wall, desk, etc).
- Call 9-1-1 if it is safe to do so. Provide as much detail as you know. Follow police instructions. Do not expose yourself or others until notified by police that the danger has passed.
- Call extension 4100 or 4458 (front desk) if it is safe to do so. Provide as much detail as you know and what action you have taken
- Do not speculate. Depending on circumstances, the responding Security Officers will coordinate efforts with the law enforcement officers.
- The President will make other notifications as necessary.

EVACUATION

When a building on campus must be evacuated, the evacuation must be done quickly, calmly, and without panic. Special attention should be given those individuals requiring additional assistance to evacuate a building. Ideally, faculty and staff should inform students that the building must be evacuated and should summarize the events to follow as listed here.

Evacuate immediately if you hear an alarm or are asked to evacuate by a college official.

- Take your personal belongings with you.
- Classrooms and offices – close, but do not lock, all doors.
- Laboratories – turn off all gas (cylinders, fuels), and other equipment or machines in use that may pose a hazard or source of ignition or fuel.
- Follow the evacuation route posted in your building.
- Walk quickly and calmly to the assembly point designated by your Faculty Member and alert others to do the same.
- During non-earthquake or fire evacuations, reserve elevators for non-ambulatory individuals.
- Wait at the designated outdoor assembly point.
- Do not leave the assembly area until you have checked in with the Faculty Member. If the primary assembly point is unsafe, go to an alternate assembly point identified by a college official.

- Notify your Faculty Member if anyone is unaccounted for from your classroom or area.
- After evacuating, **DO NOT ENTER A BUILDING FOR ANY REASON** until you are told it is safe or a college official announces an “All Clear”.

SHELTERING

Sheltering may be necessary on campus, depending on the magnitude of an incident. College facilities may be used to “shelter-in-place” staff, faculty, students and visitors, to provide shelter for displaced individuals during a campus evacuation, or to provide shelter to the community.

If public officials send out a message that a major incident has occurred that makes it unsafe for the public to move about outdoors, all MATC building occupants in the affected area will be notified via telephone public address function, email (if possible), or runners inside each building. Everyone will be asked to remain in the building for his/her own safety. However, no one will be held against his/her own will. When public officials give the “all clear” to the College Administration, building occupants will be notified through the same emergency communications channels detailed below.

EYE WITNESS MESSAGES

If you see something that needs to be reported such as vandalism, theft, and some sort of emergency situation such as a fire, tornado, or even a dangerous looking person, call 911 and then, if you can text the RAVE system to allow the college to send an alert.

EyeWitness: To submit a tip, please text to 67283 with the keyword MATCTIP followed by a space and your message. Remember, your text will remain anonymous.



Academic Programs

The following programs of study are provided to assist students in planning their academic programs. Those courses listed as major specialization courses are required for completion of a technical certificate program as well as an Associate of Applied Science degree. Additionally, students pursuing an Associate of Applied Science degree must complete the general education and elective course requirements as outlined in the A.A.S. Program of Study.

Students pursuing the Associate of Applied Science in Technical Studies degree will find the prescribed courses for a minor on the academic program pages.

Advanced Biotechnology Certificate

Program Description

This certificate program prepares students to apply scientific principles and technical skills in support of a variety of laboratories. The program includes instruction in standard laboratory practices and procedures; techniques for analysis, testing and inspection; laboratory instrumentation and equipment operation and maintenance; laboratory and materials handling safety; and computer applications that would apply to the broad spectrum of biotechnology industries including health and medical, industrial and environmental, food and agriculture, as well as other emerging industries in the growing field of biotechnology. This advanced certificate program requires a prior degree award in a science field as well as specific science course work, or permission of the Director of Biosciences.

Program Admission Requirements

- Degree (A.S., A.A.S., B.S., M.S.) in life sciences or chemistry, or permission of the Director of Biosciences
- Either route requires completion of the following courses:
 - Chemistry I
 - General Microbiology
 - Two Biology Courses (10 credit hours) which may include the following:
 - Principles of Biology
 - Modern Genetics
 - Cell Biology
 - Immunology
 - At least nine (9) General Education credit hours, which should include three of the following:
 - English Composition I
 - English Composition II
 - Public Speaking
 - Psychology
 - Sociology

Certificate Program Requirements

32 Technical Specialty Credit Hours

Year 1 Fall Semester

Course #	Course Title	Credit Hours
BIO 210	Laboratory Operations *	4
BIO 225	Laboratory Safety *	2
BIO 226	Laboratory Safety Lab	1
BIO 250	Biotechnology Techniques *	3
BIO 251	Biotechnology Techniques Lab	2

* Online Class

Year 1 Spring Semester

Course #	Course Title	Credit Hours
BIO 260	Molecular Techniques *	2
BIO 261	Molecular Techniques Lab	3
BIO 270	Cell Culture Techniques *	2
BIO 271	Cell Culture Techniques Lab	3
BIO 280	Biomanufacturing Techniques *	2
BIO 281	Biomanufacturing Techniques Lab	3

* Online Class

Year 1 Summer Semester

Course #	Course Title	Credit Hours
BIO 290	Biotechnology Internship	5

Air Conditioning & Refrigeration

Program Description

Our students develop the skills to pay the bills. This program is designed to prepare air conditioning and refrigeration mechanics and apprentices for entry-level employment in a wide range of construction, maintenance, and service positions in business and industry. The program prepares students to install, service, and repair refrigeration and air conditioning systems. The program provides instruction in residential air conditioning, commercial air conditioning, heating systems, and commercial refrigeration. Students will be E.P.A. (Environmental Protection Agency) 608 certified.

This program aligns with the Kansas Board of Regents curriculum.

Program Admission Requirements

- COMPASS Assessment
- Current Kansas driver's license

A.A.S. Degree Program Requirements

62 Credit Hours

- 32 Technical Specialty Credits
- 15 Technical Elective Credits
- 15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
HVA 103	OSHA10	1*
HVA 104	HVAC Fundamentals	3
HVA 110	HVAC Electricity Fundamentals	3
HVA 120	Domestic Refrigeration	3
HVA 140	Heating Fundamentals	3
HVA 170	Design & Blueprint Reading	3

*Online class; must be completed in order to enroll in the second semester. Credit will be transcribed when certificate is presented to Registrar.

Year 1 Spring Semester

Course #	Course Title	Credit Hours
HVA 130	Controls & Motors	3
HVA 150	Cooling	3
HVA 151	Advanced Refrigeration	3
HVA 161	EPA608	1
HVA 181	Commercial Refrigeration	3
HVA 185	Workplace Skills	1
HVA 199	Occupational Work Experience	2

Technical Electives

15 Credit Hours

Course #	Course Title	Credit Hours
AMT 264	Agricultural Power	2
ACC 100	Business Accounting	3
ACC 120	Financial Accounting	3
BTR 262	Agricultural Structures	2
BUS 126	Introduction to Business	3
DFT 103	Fundamentals of Drafting	3
DFT 105	CAD Applications	3
WLD 260	Agricultural Construction	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition	3
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Certificate Program Requirements

38 Credit Hours

- 32 Technical Specialty Credits
- 6 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
HVA 103	OSHA10	1*
HVA 104	HVAC Fundamentals	3
HVA 110	HVAC Electricity Fundamentals	3
HVA 120	Domestic Refrigeration	3
HVA 140	Heating Fundamentals	3
HVA 170	Design & Blueprint Reading	3
COM 110	Technical Writing	3

*Online class; must be completed in order to enroll in the second semester. Credit will be transcribed when certificate is presented to Registrar.

Year 1 Spring Semester

Course #	Course Title	Credit Hours
HVA 130	Controls & Motors	3
HVA 150	Cooling	3
HVA 151	Advanced Refrigeration	3
HVA 161	EPA608	1
HVA 181	Commercial Refrigeration	3
HVA 185	Workplace Skills	1
HVA 199	Occupational Work Experience	2
MAT 101	Technical Mathematics I	3

Automotive Collision Repair

Program Description

The Automotive Collision Repair program prepares students with the technical and interpersonal skills required for entry-level employment in the automotive collision repair field. The Kansas Automotive Collision Core Curriculum that is based on the four NATEF core areas of certification will be delivered using the I-CAR Curriculum, the industry standard.

This program aligns with the Kansas Board of Regents curriculum.

Program Admission Requirements

- COMPASS Assessment
- Current Kansas driver's license

A.A.S. Degree Program Requirements

62 Credit Hours

43 Technical Specialty Credits

4 Technical Elective Credits

15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
ACR 104	Non-structural A&D Repair 1	4
ACR 108	Non-structural A&D Repair 2	4
ACR 114	Non-structural A&D Repair 3	4
ACR 124	Paint & Refinishing 1	3
ACR 128	Paint & Refinishing 2	3
ACR 154	Structural A&D Repair 1	2
ACR 158	Structural A&D Repair 2	2

Year 1 Spring Semester

Course #	Course Title	Credit Hours
ACR 118	Non-Structural A&D Repair 4	5
ACR 134	Paint & Refinishing 3	3
ACR 138	Paint & Refinishing 4	4
ACR 144	Mechanical & Electrical	3
ACR 164	Structural A&D Repair 3	3
ACR 168	Structural A&D Repair 4	3

Technical Electives

4 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
ACC 120	Financial Accounting	3
AMT 264	Agricultural Power	2
BTR 262	Agricultural Structures	2
BUS 126	Introduction to Business	3
BUS 255	Principles of Management	3
CIS 100	Software Applications	3
WLD 260	Agricultural Construction	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Certificate Program Requirements

43 Technical Specialty Credit Hours

Year 1 Fall Semester

Course #	Course Title	Credit Hours
ACR 104	Non-structural A&D Repair 1	4
ACR 108	Non-structural A&D Repair 2	4
ACR 114	Non-structural A&D Repair 3	4
ACR 124	Paint & Refinishing 1	3
ACR 128	Paint & Refinishing 2	3
ACR 154	Structural A&D Repair 1	2
ACR 158	Structural A&D Repair 2	2

Year 1 Spring Semester

Course #	Course Title	Credit Hours
ACR 118	Non-Structural A&D Repair 4	5
ACR 134	Paint & Refinishing 3	3
ACR 138	Paint & Refinishing 4	4
ACR 144	Mechanical & Electrical	3
ACR 164	Structural A&D Repair 3	3
ACR 168	Structural A&D Repair 4	3

Automotive Technology

Program Description

This two-year, four semester program prepares students for an Associate of Applied Science Degree in Automotive Technology. The program provides the necessary training to diagnose, test, and repair modern cars and light trucks. Graduates are ready for positions as entry-level automotive technicians, service writers, and with experience, service managers and automotive repair business owners.

The Automotive Technology program at MATC is an Automotive Service Excellence (ASE) National Automotive Technicians Education Foundation (NATEF) certified program. Students in the program have the option to be certified by the Mobile Air Conditioning Society (MACS) in refrigerant recover/recycling.

MATC has an articulation agreement with Pittsburg State University, Kansas State University, and Fort Hays State University. Through these agreements, students may transfer their MATC Credits towards a Bachelor's degree.

This program aligns with the Kansas Board of Regents curriculum.

A.A.S. Degree Program Requirements

63 Credit Hours

48 Technical Specialty Credits

15 General Education Credits

Semester 1

Course #	Course Title	Credit Hours
AMT 111	Electrical 1	3
AMT 116	Electrical 2	2
AMT 121	Engine Performance 1	3
AMT 125	Engine Performance 2	4

Semester 2

Course #	Course Title	Credit Hours
AMT 151	Steering & Suspension 1	2
AMT 152	Steering & Suspension 2	2
AMT 170	Brakes 1	3
AMT 171	Brakes 2	2
AMT 180	Electrical 3	3

Semester 3

Course #	Course Title	Credit Hours
AMT 200	Automatic Transmissions & Transaxles 1	3
AMT 201	Automatic Transmissions & Transaxles 2	3
AMT 205	Manual Transmissions & Transaxles	4
AMT 221	Engine Repair 1	2

Semester 4

Course #	Course Title	Credit Hours
AMT 250	Engine Repair 2	3
AMT 265	Engine Performance 3	3
AMT 270	Electrical 4	2
AMT 275	Heating & Air Conditioning	4

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Program Admission Requirements

- COMPASS Assessment
- Current Kansas driver's license
- Copy of DMV driving record

Technical Minor

24 Credit Hours

Semester 1

Course #	Course Title	Credit Hours
AMT 111	Electrical 1	3
AMT 116	Electrical 2	2
AMT 121	Engine Performance 1	3
AMT 125	Engine Performance 2	4

Semester 2

Course #	Course Title	Credit Hours
AMT 151	Steering & Suspension 1	2
AMT 152	Steering & Suspension 2	2
AMT 170	Brakes 1	3
AMT 171	Brakes 2	2
AMT 180	Electrical 3	3

Building Trades

Program Description

The Building Trades program offers training in residential and commercial construction needed in the workforce today. This training uses the National Center for Construction Education and Research (NCCER) curriculum. Course work includes safety, blueprint reading, tools and materials, framing, interior and exterior finishing, roofing, cabinets, and concrete work. Application and practice of skills is accomplished through the construction of a home within the local area.

This program aligns with the Kansas Board of Regents curriculum.

Program Admission Requirements

- COMPASS Assessment

A.A.S. Degree Program Requirements

63 Credit Hours

- 36 Technical Specialty Credits
- 3 Drafting Technology Credits
- 9 Technical Elective Credits
- 15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
BTR 102	Safety Orientation (OSHA 10)	1*
BTR 106	Introductory Craft Skills	3
BTR 116	Carpentry Basics	4
BTR 121	Floors, Walls & Ceiling Framing	4
BTR 131	Roof Framing	3
BTR 136	Windows, Doors & Stairs	3

*Online class; must be completed in order to enroll in the second semester. Credit will be transcribed when certificate is presented to Registrar.

Year 1 Spring Semester

Course #	Course Title	Credit Hours
BTR 141	Cabinet Installation/Kitchen Design	3
BTR 150	Drywall, Insulation & Ventilation for Residential Construction	5
BTR 160	Interior Finish Carpentry	5
BTR 171	Painting, Finishing, & Decorating	5

Drafting Technology Credits

Course #	Course Title	Credit Hours
DFT 105	CAD Applications	3

Technical Electives

9 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
ACC 120	Financial Accounting	3
AMT 264	Agricultural Power	2
BUS 126	Introduction to Business	3
CIS 100	Software Applications	3
WLD 260	Agricultural Construction	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Certificate Program Requirements

45 Credit Hours

- 36 Technical Specialty Credits
- 3 Drafting Technology Credits
- 6 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
BTR 102	Safety Orientation (OSHA 10)	1*
BTR 106	Introductory Craft Skills	3
BTR 116	Carpentry Basics	4
BTR 121	Floors, Walls & Ceiling Framing	4
BTR 131	Roof Framing	3
BTR 136	Windows, Doors & Stairs	3
COM 110	Technical Writing	3

*Online class; must be completed in order to enroll in the second semester. Credit will be transcribed when certificate is presented to Registrar.

Year 1 Spring Semester

Course #	Course Title	Credit Hours
BTR 141	Cabinet Installation/Kitchen Design	3
BTR 150	Drywall, Insulation & Ventilation for Residential Construction	5
BTR 160	Interior Finish Carpentry	5
BTR 171	Painting, Finishing, & Decorating	5
MAT 101	Technical Mathematics I	3

Drafting Technology Credits

Course #	Course Title	Credit Hours
DFT 105	CAD Applications	3

Business Administration

Program Description

The Business Administration program provides students with course options for their chosen business support services career pathway. Students will be able to choose from three options to develop marketable skills in their focused area: accounting, business administrative technology, or medical office administration. Students completing a certificate in one of these areas will enter the workforce ready to meet the needs of the workplace. The A.A.S. degree option provides additional business skills to move into supervisory positions and/or pursue a bachelor's degree at a university.

A.A.S. in Business Support Services Degree Requirements

62 Credit Hours

39-42 Technical Specialty Credits

- Accounting
- Business Administrative Technology
- Medical Office Administration

5-8 Technical Elective Credits

15 General Education Credits

Business Administration Technical Minor

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 126	Introduction to Business	3
BUS 185	Business Ethics & Human Relations	3
BUS 255	Principles of Management	3
CIS 100	Software Applications	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition	3
COM 110	Technical Writing	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
BSC 110	Biology	5
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

****See Individual Focus Areas for Technical
Specialty and Technical Elective Credits
Required for Associate of Applied Science
Degree****

Business Administration

Business Administrative Technology

The administrative focus prepares students for office support positions in a wide variety of industries through hands-on software and business preparation courses.

Technical Specialty Courses

40 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp) OR	
ACC 120	Financial Accounting (Fa, Sp)	3
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 126	Introduction to Business (Fa, Sp)	3
BUS 130	Records Management (Fa, Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 210	Workstation Management (Fa)	3
BUS 220	Administrative Procedures (Sp)	3
BUS 255	Principles of Management (Fa)	3
BUS 275	Professional Development (Fa, Sp)	2
CIS 100	Software Applications (Fa, Sp)	3
CIS 116	Spreadsheet Management (Fa, Sp)	2
CIS 121	Word Processing (Fa, Sp)	2
CIS 126	Database Management (Fa, Sp)	2
CIS 155	Integrated Applications (Sp)	2

Technical Electives

7 Credit Hours

Course #	Course Title	Credit Hours
ACC 120	Financial Accounting (Fa, Sp)	3
ACC 125	Computerized Accounting (Sp)	3
ACC 130	Payroll Accounting (Fa)	3
BUS 111	Personal Finance	3
BUS 141	Medical Terminology (Fa, Sp)	3
BUS 199	Business Internship (Fa, Sp)	1-3
CIS 150	Web Page Applications (Fa, Sp)	3
CIS 155	Integrated Applications (Sp)	2
CRT 100	Principles of Information Assurance (Fa, Sp)	1

Certificate Requirements

30 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp) OR	
ACC 120	Financial Accounting (Fa, Sp)	3
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 130	Records Management (Fa, Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 220	Administrative Procedures (Sp)	3
CIS 100	Software Applications (Fa, Sp)	3
CIS 116	Spreadsheet Management (Fa, Sp)	2
CIS 121	Word Processing (Fa, Sp)	2
CIS 126	Database Management (Fa, Sp)	2
MAT 108	Beginning Algebra or higher	3

Accounting

The accounting focus prepares students for accounting support positions with practical accounting skills and general business knowledge needed to perform computerized accounting procedures in any type of office.

Technical Specialty Courses

42 Credit hours

Course #	Course Title	Credit Hours
ACC 120	Financial Accounting (Fa, Sp)	3
ACC 125	Computerized Accounting (Sp)	3
ACC 130	Payroll Accounting (Fa)	3
ACC 140	Managerial Accounting (Sp)	3
ACC 270	Tax Accounting (Fa)	3
BUS 111	Personal Finance	3
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 126	Introduction to Business (Fa, Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 255	Principles of Management (Fa)	3
BUS 275	Professional Development (Fa, Sp)	2
CIS 100	Software Applications (Fa, Sp)	3
CIS 116	Spreadsheet Management (Fa, Sp)	2
CIS 121	Word Processing (Fa, Sp)	2

Technical Electives

5 Credit Hours

Course #	Course Title	Credit Hours
BUS 130	Records Management (Fa, Sp)	3
BUS 199	Business Internship (Fa, Sp)	1-3
BUS 210	Workstation Management (Fa)	3
BUS 220	Administrative Procedures (Sp)	3
CIS 126	Database Management (Fa, Sp)	2
CIS 150	Web Page Applications (Fa, Sp)	3
CIS 155	Integrated Applications (Sp)	2
CRT 100	Principles of Information Assurance (Fa, Sp)	1

Certificate Requirements

33 Credit Hours

Course #	Course Title	Credit Hours
ACC 120	Financial Accounting (Fa, Sp)	3
ACC 125	Computerized Accounting (Sp)	3
ACC 130	Payroll Accounting (Fa)	3
ACC 140	Managerial Accounting (Sp)	3
ACC 270	Tax Accounting (Fa)	3
BUS 111	Personal Finance	3
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
CIS 100	Software Applications (Fa, Sp)	3
MAT 108	Beginning Algebra or higher	3

Business Administration

Medical Office Administration

The medical focus prepares students for medical office support positions by supplying the student with courses in office expertise and software as well as courses specific to medical offices.

Coding Certification Requirements

Students completing the Medical Office Administration Certificate or A.A.S. and have appropriate work experience will be prepared to sit for a national coding certification test.

There is a growing need for certified coders in the medical field; credentialed employees are rewarded financially. Currently the following credentials are recognized by employers: American Academy of Professional Coders (AAPC's), Certified Professional Coder (CPC) for physician and outpatient coding, and American Health Information Management Association (AHIMA), and Certified Coding Specialist (CCS). These certifications are recognized by employers seeking ethical, accurate, and experienced coders.

To become a certified coder, the applicant must have passed the national certification test plus have two years' coding experience. Those applicants who are successful in passing the certification examination but have not yet met the required two years of coding work experience will be awarded the apprentice certification. Upon completion of acquiring the required coding work experience, the apprentice coder submits appropriate documentation and receives the official certification diploma.

Technical Specialty Courses

39 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 126	Introduction to Business (Fa, Sp)	3
BUS 130	Records Management (Fa, Sp)	3
BUS 141	Medical Terminology (Fa, Sp)	3
BUS 146	Medical Billing & Coding (Fa)	3
BUS 148	Advanced Medical Coding (Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 220	Administrative Procedures (Sp)	3
BUS 275	Professional Development (Fa, Sp)	2
CIS 100	Software Applications (Fa, Sp)	3
CIS 121	Word Processing (Fa, Sp)	2
CIS 126	Database Management (Fa, Sp)	2

Technical Electives

8 Credit Hours

Course #	Course Title	Credit Hours
ACC 120	Financial Accounting (Fa, Sp)	3
ACC 125	Computerized Accounting (Sp)	3
ACC 130	Payroll Accounting (Fa)	3
BSC 125	Anatomy and Physiology	5
BUS 111	Personal Finance	3
BUS 199	Business Internship (Fa, Sp)	1-3
BUS 210	Workstation Management (Fa)	3
BUS 255	Principles of Management (Fa)	3
CIS 116	Spreadsheet Management (Fa, Sp)	2
CIS 150	Web Page Applications (Fa, Sp)	3
CIS 155	Integrated Applications (Sp)	2

Certificate Requirements

33 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp) OR	3
ACC 120	Financial Accounting (Fa, Sp)	
BUS 120	Business English (Fa, Sp)	3
BUS 125	Business Communication (Fa, Sp)	3
BUS 130	Records Management (Fa, Sp)	3
BUS 141	Medical Terminology (Fa, Sp)	3
BUS 146	Medical Billing & Coding (Fa)	3
BUS 148	Advanced Medical Coding (Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 220	Administrative Procedures (Sp)	3
CIS 100	Software Applications (Fa, Sp)	3
MAT 108	Beginning Algebra or higher	3

Note: Students interested in pursuing a medical focus but who do not want to be medical coders should take BUS 141 Medical Terminology and BUS 146 Medical Billing and Coding. These students are not required to take BUS 148 Advanced Medical Billing and Coding. An appropriate alternative will be selected with an advisor.

Students interested in pursuing a medical focus who do want to become medical coders should take BUS 141 Medical Terminology, BUS 146 Medical Billing and Coding, and BUS 148 Advanced Medical Billing and Coding. For students pursuing an A.A.S. degree, it is strongly recommended that BSC 125 Anatomy and Physiology be taken as one of the technical electives.

Computer-Aided Drafting Technology

Program Description

The Computer-Aided Drafting Technology program is a two-year program that prepares students with the skills required to meet industry standards across the United States. Working with engineers, architects, or machinists, drafters help develop CAD plans and drawings for industry. Students will demonstrate competence via a technical portfolio and credentials that will prepare them for success in entry-level, intermediate, and senior positions. The program provides instruction in engineering graphics, architectural design, manufacturing drawing and processes.

Program Admission Requirements

CAD students must be proficient in keyboarding, Microsoft Windows™, and Microsoft Office Suite™. Students who do not possess the required computer skills must complete MATC's CIS 100 Software Applications course.

A.A.S. Degree Requirements

62 Credit Hours

42 Technical Specialty Credits

5 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

42 Credit Hours

Course #	Course Title	Credit Hours
DFT 103	Fundamentals of Drafting (Fa, Sp)	3
DFT 105	CAD Applications (Fa, Sp)	3
DFT 110	Engineering Graphics (Fa, Sp)	3
DFT 160	Advanced CAD Applications (Fa, Sp)	3
DFT 165	MicroStation I (Fa, Sp)	3
DFT 170	Structural Drafting: Steel (Fa)	3
DFT 180	Civil Drafting I: Site Plan (Fa, Sp)	3
DFT 215	Commercial Architectural Drafting (Sp)	3
DFT 225	Residential Architectural Drafting (Fa)	3
DFT 230	Machine Drafting I: Details (Fa, Sp)	3
DFT 235	Machine Drafting II: Assemblies (Fa, Sp)	3
DFT 251	Occupational Portfolio (Fa, Sp)	1
DFT 266	MicroStation II (Fa, Sp)	2
DFT 271	Mechanical Drafting: RevitMEP (Fa)	3
DFT 285	Civil Drafting II: Civil 3D (Fa, Sp)	3

Technical Electives

5 Credit Hours

Course #	Course Title	Credit Hours
DFT 270	Revit Architecture (Fa, Sp)	3
BUS 126	Introduction to Business (Fa, Sp)	3
BUS 255	Principles of Management (Fa)	3
WLD 260	Agricultural Construction (Fa, Sp)	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Technical Minor

Course #	Course Title	Credit Hours
DFT 103	Fundamentals of Drafting	3
DFT 160	Advanced CAD Applications	3
DFT 165	MicroStation I	3
DFT 180	Civil Drafting I: Site Plan	3
DFT 215	Commercial Architectural Drafting OR	3
DFT 225	Residential Architectural Drafting	
DFT 230	Machine Drafting I: Details	3

Dental Hygiene

Program Description

The MATC Dental Hygiene Program prepares its graduates to become members of a dental health team dedicated to helping individuals maintain oral health and prevent disease. The Dental Hygienist is qualified by education and licensure to provide direct patient care prescribed by the dentist, including removing deposits and stains from the teeth, exposing and developing dental radiographs, and performing various other preventive and therapeutic services related to oral health care. The Dental Hygienist educates individuals and groups of patients in proper preventive measures and explains the relationship between oral health and overall health.

The A.A.S degree program will prepare graduates to take the National Board Dental Hygiene Examination (NBDHE), the regional clinical exams, and state exams required to obtain licensure to practice.

Program Admission Requirements

(Criteria updated on an Annual basis)

- Successful Completion of prerequisites
 - Software Applications
 - General Chemistry with Lab
 - Human Anatomy & Physiology
 - Microbiology with Lab
- Appropriate assessment/placement scores
- Official copies of all high school and postsecondary education transcripts
- Submission of an Admissions Portfolio that contains all admission requirements
- Participation in an Admissions Interview

Accreditation

The program in Dental Hygiene is accredited by the Commission on Dental Accreditation *and has been granted the accreditation status of "approval without reporting requirements"*. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611. The Commission's web address is: <http://www.ada.org/100.aspx>.

A.A.S. Degree Program Requirements

72 Credit Hours

54 Technical Specialty Credits

18 General Education Credits

Semester 1

Technical Specialty Courses

Course #	Course Title	Credit Hours
DHT 102	Oral Anatomy, Head and Neck Embryology, and Histology	4
DHT 103	Dental Radiography	3
DHT 105	Dental Hygiene Clinic I: Pre-Clinic	5
DHT 109	Preventive Dental Hygiene	2

Semester 2

Technical Specialty Courses

Course #	Course Title	Credit Hours
DHT 106	Dental Hygiene Clinic II	5
DHT 108	Periodontology	3
DHT 110	Oral Pathology	3
DHT 115	Nutrition and Oral Health	2

Summer

Technical Specialty Courses

Course #	Course Title	Credit Hours
DHT 112	Dental Hygiene Externship	1

Semester 3

Technical Specialty Courses

Course #	Course Title	Credit Hours
DHT 205	Dental Hygiene Clinic III	5
DHT 206	Dental Materials	3
DHT 207	Pharmacology	3
DHT 208	Dental Pain Management	3

Semester 4

Technical Specialty Courses

Course #	Course Title	Credit Hours
DHT 210	Dental Hygiene Clinic IV	5
DHT 211	Ethics Legal Issues and Kansas Law	2
DHT 212	Community Public Health and Edu.	3
DHT 213	Special Needs	2

General Education Requirements

18 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		12 Required
COM 115	Public Speaking	3
NTR 105	Nutrition	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3

****This curriculum is subject to change. Please contact the Main Office of MATC for the most updated information.**

Electric Power and Distribution

Program Description

The Electric Power and Distribution program enhances students' knowledge and technical skills required to succeed in the electrical distribution industry. Graduates of the Electric Power and Distribution program will be able to successfully install, maintain, and operate electrical systems to supply electrical energy to residential, commercial, and industrial customers and to join gas and electrical underground generation facilities.

The EPD program provides the training needed to construct, operate, and maintain power line equipment. This program is one of only a handful in the United States that has open admission to the public. The program begins in January of each year; a summer internship is required.

Program Admission Requirements

- Applicants must be 18 years of age prior to beginning the program in January
- Verification of a Class A Commercial Drivers' License (CDL) by submitting a copy of current, valid CDL license
- COMPASS Assessment

A.A.S. Degree Requirements

63 Credit Hours

- 48 Technical Specialty Credits
- 15 General Education Credits

Year 1 Spring Semester

Technical Specialty Courses

Course #	Course Title	Credit Hours
EPD 105	Climbing Skills	4
EPD 110	Pole Framing & Construction Specifications	4
EPD 120	Equipment Operation	3
EPD 125	Setting and Replacing Poles	1
EPD 130	Transformer Theory	4
EPD 135	Transformer Installation	4

Year 1 Summer Semester

Course #	Course Title	Credit Hours
EPD 199	Utility Internship	8

Year 1 Fall Semester

Technical Specialty Courses

Course #	Course Title	Credit Hours
EPD 140	Service Installation & Metering	4
EPD 145	Conductor Installation & Repair	4
EPD 150	Rubber Gloving & Hot Sticking Methods	3
EPD 160	Underground Distribution	3
EPD 170	Fusing & System Coordination	1
EPD 180	Substations & Voltage Regulation	4
EPD 195	Employability Skills	1

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Certificate Requirements

54 Credit Hours

- 48 Technical Specialty Credits
- 6 General Education Credits

Year 1 Spring Semester

Technical Specialty Courses

Course #	Course Title	Credit Hours
EPD 105	Climbing Skills	4
EPD 110	Pole Framing & Construction Specifications	4
EPD 120	Equipment Operation	3
EPD 125	Setting and Replacing Poles	1
EPD 130	Transformer Theory	4
EPD 135	Transformer Installation	4
MAT 101	Technical Mathematics I	3

Year 1 Summer Semester

Course #	Course Title	Credit Hours
EPD 199	Utility Internship	8

Year 1 Fall Semester

Technical Specialty Courses

Course #	Course Title	Credit Hours
EPD 140	Service Installation & Metering	4
EPD 145	Conductor Installation & Repair	4
EPD 150	Rubber Gloving & Hot Sticking Methods	3
EPD 160	Underground Distribution	3
EPD 170	Fusing & System Coordination	1
EPD 180	Substations & Voltage Regulation	4
EPD 195	Employability Skills	1
COM 110	Technical Writing	3

Facilities Maintenance Technology

Program pending approval by the Kansas Board of Regents

Program Description

The Facility Maintenance Technology curriculum prepares individuals to repair and maintain electrical and mechanical systems and physical structures of residential, commercial, and industrial facilities. Emphases include multi-disciplined systems maintenance, troubleshooting, and problem resolution. The program provides intensive hands-on instruction in heating, ventilation, and air conditioning, print reading, basic carpentry, basic electrical wiring and troubleshooting, and basic plumbing. At the Associates degree level the program adds instruction in motor controls and electronic environmental control systems, boiler maintenance, basic computer networking, and basic computer aided drafting. OSHA 10 certification and other applicable third-party validated credentials will be included as part of the various courses.

Program Admission Requirements

- COMPASS Assessment

A.A.S. Degree Requirements

65 Credit Hours

50 Technical Specialty Credits
15 General Education Credits

Semester 1

Course #	Course Title	Credit Hours
FMT 100	Principles of Industrial Technology	3
HVA 103	OSHA10	1
FMT 105	Print Reading	3
HVA 104	HVAC Fundamentals	3
HVA 110	HVAC Electricity Fundamentals	3
WLD 260	Agricultural Construction	3

Semester 2

Course #	Course Title	Credit Hours
CIS 099	Computer Basics	1
HVA 120	Domestic Refrigeration	3
HVA 140	Heating Fundamentals	3
FMT 110	Wiring and Electrical Troubleshooting	3
FMT 120	Carpentry and Structural Repair	3
FMT 130	Plumbing and Pipe Fitting	3

Semester 3

Residential Option

Course #	Course Title	Credit Hours
FMT 122	Doors, Locks, and Hardware	3
FMT 132	Appliance Repair	3
FMT 140	Residential Building Codes	3

Semester 3

Industrial Option

Course #	Course Title	Credit Hours
HVA 181	Commercial HVAC Systems	3
FMT 205	Forklift and Skid Steer Operations	2
CRT 100	Principles of Information Assurance	1

Semester 4

Residential Option

Course #	Course Title	Credit Hours
BTR 160	Interior Finish Carpentry	5
FMT 240	Residential Journeyman Licensing Exam Prep	1
BUS 185	Business Ethics & Human Relations	3

Semester 4

Industrial Option

Course #	Course Title	Credit Hours
FMT 215	Motors, Control Systems, & Logic Controllers	6
FMT 250	Boiler Maintenance Operations	3

Certificate Requirements

38 Credit Hours

32 Technical Specialty Credits
6 General Education Credits

Semester 1

Course #	Course Title	Credit Hours
FMT 100	Principles of Industrial Technology	3
HVA 103	OSHA10	1
FMT 105	Print Reading	3
HVA 104	HVAC Fundamentals	3
HVA 110	HVAC Electricity Fundamentals	3
WLD 260	Agricultural Construction	3
MAT 101	Technical Mathematics I	3

Semester 2

Course #	Course Title	Credit Hours
CIS 099	Computer Basics	1
HVA 120	Domestic Refrigeration	3
HVA 140	Heating Fundamentals	3
FMT 110	Wiring and Electrical Troubleshooting	3
FMT 120	Carpentry and Structural Repair	3
FMT 130	Plumbing and Pipe Fitting	3
COM 110	Technical Writing	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 110	Technical Writing	3
Math		3 Required
MAT 109	Technical Mathematics II	3
Additional General Education		9 Required
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology OR	3
SOC 100	Introduction to Sociology	3

Information & Network Technology

A National Security Administration Center of Academic Excellence for 2-Year Colleges



Program Description

Information and Network Technology is focused on the design, implementation, and configuration of network servers, computer networks and network infrastructure, and their integration into a comprehensive computing system. Both hardware and software aspects are covered. Specific topics include computer communication protocols, computer network analysis, reliability, security, fault tolerance, operating systems, computer and network hardware and asset management.

Successful Network Technicians must be adaptable, self-learners with good spatial, logical, and organizational skills. Strong math skills are not required but do generally indicate the individual's problem-solving ability.

Certifications

Students completing the A.A.S. degree will receive the National Security Administration's CNSS 4011 and CNSS 4013 Certifications. Additionally, completion of the Information and Network Technology program prepares students to sit for the following certifications:

- A+
- Cisco Certified Network Associate (CCNA)
- CCNA Security
- Linux +
- Microsoft Certified Systems Engineer (MCSE) (partial)
- Microsoft Certified Systems Administrator (MCSA) (partial)
- Network +
- Security+
- DoD Directive 8570.01
- IAT Level I – A+, Network+
- IAT Level II – Security+
- IAM Level I – Security+

Articulations

- Pittsburg State University
- KSU-Salina
- Washburn University
- Fort Hays State University

Program Requirements

- Students must have previous computer usage skills including Microsoft Windows™ and Microsoft Office Suite™. Students with no experience in either of these environments must complete CIS 100 Software Applications.
- Ability to read at the 11th grade level and possess at least an 8th grade level of algebra understanding.
- Criminal background check. Because of the training in digital security and forensics technologies, a felony conviction for fraud, theft, violent or sexual crimes may prevent acceptance into the Information and Network Technology program. The background check, at a cost of \$45, must be completed by the applicant. Each instance is reviewed on a case-by-case basis. Further information is provided during new student orientation.

A.A.S. Degree Requirements

63 Credit Hours

43 Technical Specialty Credits

5 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

43 Credit Hours

Course #	Course Title	Credit Hours
CRT 100	Principles of Information Assurance (Fa, Sp)	1
CRT 110	Employability Skills (Fa, Sp)	1
CRT 115	Information & Network Technology (INT) Essentials (Fa, Sp)	1
CRT 118	Windows Administration Using the Command Shell (Fa, Sp)	1
CRT 120*	Advanced Operating Systems (Fa, Sp)	3
CRT 125*	PC Hardware (Fa, Sp)	3
CRT 144***	UNIX Fundamentals (Sp)	3
CRT 148	Microsoft Network OS (Fa)	3
CRT 151	Infrastructure Virtualization (Sp)	3
CRT 170**	Networking Fundamentals (Cisco 1) (Fa, Sp)	3
CRT 175**	Routing Protocols and Concepts (Cisco 2) (Fa, Sp)	3
CRT 181	Network/Server Management (Fa)	3
CRT 215	Database Systems (Fa, Sp)	3
CRT 282****	Network Security (Fa, Sp)	3
CRT 286	LAN/WAN Implementation and Support (Fa, Sp)	3
CRT 289	Information Systems Security (Fa, Sp)	3
CRT 295	INT Capstone (Fa, Sp)	3
*	Maps to A+ Certification	
**	Maps to Cisco CCNA Certification	
***	Maps to Linux + Certification	
****	Maps to Security + Certification and CCNA Security	

Technical Electives

5 Credit Hours

Course #	Course Title	Credit Hours
BUS 126*	Introduction to Business	3
CIS 116	Spreadsheet Management	2
CIS 126	Database Management	2
CIS 150	Web Page Applications	3

*Required

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3
	Advanced Math OR	3
	Advanced English	3

Clinical Medical Laboratory Technology

Program Description

Medical Laboratory Technicians prepare and analyze specimens using body fluids and cells. They use microscopes and other sophisticated laboratory equipment and computerized instruments to test and analyze results. Lab technicians usually work under the supervision of medical and clinical laboratory technologists.

The Medical Laboratory Technician program uses a blended instructional model. Lectures are **online** and accessed through MATC's learning management system. Laboratory and clinical skills training is provided in a traditional face-to-face format, using instruments and equipment found in the modern laboratory.

Program Admission Requirements

- Complete all general education coursework

Course #	Course Title	Credit Hours
BSC 125	Anatomy and Physiology	5
BSC 205	Microbiology	5
CHM 110	Chemistry I	5
COM 105	English Composition I	3
COM 115	Public Speaking	3
MAT 110	Intermediate Algebra or higher	3

- Submit official transcript(s) to MATC
- Turn in Medical Laboratory Technology Program Application and Essential Functions Form
- Schedule an interview with the MATC Clinical Medical Laboratory Technology Director
- Complete background check
- Provide proof of immunizations

NOTE: MLT 120, MLT 121, and ALH 101

may be taken prior to admission to the program.

Program Accreditation

In December, 2012 the Medical Laboratory Technician program at MATC completed all requirements for recognition as a "Serious Applicant for Initial Accreditation" by: National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont IL 60018 773-714-8880

A.A.S. Degree Requirements

70 Credit Hours

46 Technical Specialty Credits

24 General Education Credits

Year 2 3rd Semester

Course #	Course Title	Credit Hours
MLT 120	Introduction to the Laboratory for MLT *	2
MLT 121	Introduction to the Laboratory Lab for MLT	1
MLT 220	Hematology & Coagulation for MLT *	3
MLT 221	Hematology & Coagulation Lab for MLT	3
MLT 240	Clinical Chemistry for MLT *	3
MLT 241	Clinical Chemistry Lab for MLT	3
MLT 250	Immunology for MLT *	2
MLT 251	Immunology Lab for MLT	1

* Online Class

Year 2 4th Semester

Course #	Course Title	Credit Hours
MLT 230	Urinalysis & Body Fluids for MLT *	2
MLT 231	Urinalysis & Body Fluids Lab for MLT	1
MLT 270	Pathogenic Microbiology for MLT *	3
MLT 271	Pathogenic Microbiology Lab for MLT	3
MLT 280	Blood Bank for MLT *	3
MLT 281	Blood Bank Lab for MLT	3
ALH 101	Phlebotomy	3

* Online Class

Year 2 5th Semester

Course #	Course Title	Credit Hours
MLT 298	Clinical Internship I for MLT	5
MLT 299	Clinical Internship II for MLT	5

Nursing – Associate Degree

Program Description

A registered nurse with an associate's degree is a skilled health care provider who administers nursing care directly to patients and their families in a variety of settings. The Associate Degree program at MATC provides a bridge from a licensed practical nurse to professional nurse by completing additional nursing courses and clinical practice. The graduate is eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN).

This program aligns with the Kansas Board of Regents curriculum.

Note:

All ADN program requirements are listed in the Associate Degree Nursing Admissions Packet, available at:
www.manhattantech.edu/document_center/nursing/

Additional Information

A maximum of 7 credit hours from a PN certificate program will be transcribed to meet the A.A.S. degree requirement.

Accreditation

The Associate Degree Nursing program is approved by:
 Kansas State Board of Nursing
 900 SW Jackson, Suite 1051
 Topeka, KS 66612.

The program is accredited by:
 Accreditation Commission for Education in Nursing
 3343 Peachtree Road NE, Suite 850
 Atlanta, Georgia 30326.
 Telephone: 404.975.5000
<http://www.acenursing.org>

Associate Degree Requirements

62 Credit Hours

Pre-Requisites (2.5 cumulative GPA required)

Course #	Course Title	Credit Hours
BSC 125	Anatomy and Physiology	5
BSC 205	Microbiology	5
CIS 100	Software Applications	3
COM 105	English Composition I	3
COM 115	Public Speaking	3
MAT 110	Intermediate Algebra	3
NTR 105	Nutrition	3
PSY 100	General Psychology	3
PSY 125	Human Growth and Development	3

1st Semester

Course #	Course Title	Credit Hours
NUR 201	RN Transition Course	2
NUR 220	Nursing Across the Lifespan	10

2nd Semester

Course #	Course Title	Credit Hours
NUR 230	Management of Patient Care	12

Nursing – Practical

Program Description

Licensed Practical Nurses (LPN) give direct care to patients in a variety of settings under the immediate supervision of a registered nurse, physician, or dentist. The Practical Nursing program provides preparation for the LPN role through classroom and clinical experiences, using the Kansas Practical Nursing Core Curriculum. Upon completion of the program, the graduate will be eligible to apply for licensure as a practical nurse and to take the National Council Examination for Practical Nurses (NCLEX-PN). The curriculum also serves as the first level for students who want to continue their education in nursing.

This program aligns with the Kansas Board of Regents curriculum.

Note:

All PN program requirements are listed in the Practical Nursing Admissions Packet, available at:

www.manhattantech.edu/document_center/nursing

Accreditation

The Practical Nursing Program is approved by:

Kansas State Board of Nursing

900 SW Jackson, Suite 1051

Topeka, KS 66612

Certificate Program Requirements

46 Credit Hours

Pre-Requisites (must be completed with a C or better)

Course #	Course Title	Credit Hours
BSC 125	Anatomy and Physiology	5
CIS 100	Software Applications	3
NTR 105	Nutrition	3
PSY 125	Human Growth and Development	3

Year 1 Fall Semester

Course #	Course Title	Credit Hours
NUR 102	Medication Math	1
NUR 107	KSPN Foundations of Nursing	4
NUR 108	KSPN Foundations of Nursing Clinical	2
NUR 111	KSPN Pharmacology	3
NUR 117	KSPN Medical-Surgical Nursing I	4
NUR 118	KSPN Medical-Surgical Nursing I Clinical	3

Year 1 Spring Semester

Course #	Course Title	Credit Hours
NUR 133	Personal and Career Orientation	1
NUR 134	KSPN Mental Health Nursing	2
NUR 136	KSPN Gerontology Nursing	2
NUR 137	KSPN Medical-Surgical Nursing II	4
NUR 138	KSPN Medical-Surgical Nursing II Clinical	3
NUR 170	KSPN Maternal Child Nursing	2
NUR 171	KSPN Maternal Child Clinical	1

Surgical Technology

Program Description

Surgical Technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients. The profession of Surgical Technology has grown to meet the continuing demand for well-educated, highly skilled, and versatile individuals who work with the surgeon and other professionals to deliver the highest possible level of patient care.

The Surgical Technologist possesses expertise in the theory and application of aseptic technique and combines the knowledge of human anatomy, surgical procedures, instrumentation and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

The Surgical Technology program is a partnership between Manhattan Area Technical College and Seward County Community College (SCCC). Students enroll with SCCC for the lecture portion of the program, which they will access online directly from SCCC. Students then enroll at MATC for the lab and clinical portions of the training and complete these at facilities provided by MATC and regional healthcare providers. For more information about the SCCC program, see www.sccchealth.com.

This program aligns with the Kansas board of Regents curriculum.

Admissions Procedures

- Complete SCCC and MATC Admission forms
- Complete SCCC ST program application packet
- Take appropriate entrance exams
- Submit official transcripts/GED to SCCC
- Schedule interview with SCCC Surgical Technology Program Coordinator
- Wait for letter from the SCCC Allied Health Admission Committee regarding status of application before enrolling in core emphasis courses
- Once accepted into SCCC's Surgery Technology program, immunizations and background check will be required

Certificate Program Requirements

46 Credit Hours (44 credit hours required at SCCC/ATS)

33 Technical Specialty Credits

13 General Education Credits

5 Prerequisite Credits

8 Other General Education

Prerequisite

Course #	Course Title	Credit Hours
BSC 125	Human Anatomy & Physiology	5

Technical Specialty Courses

ST Courses are offered by Seward County Community College in an online format

****STL Courses are offered by MATC as face-to-face labs/clinicals**

Course #	Course Title	Credit Hours
ST 1005	SCCC Introduction to Surgical Technology	4
ST 1015	SCCC Principles and Practice of Surgical Technology	5
**STL 1016	MATC Principles and Practice of Surgical Technology Lab	3
ST 1303	SCCC Pharmacology for Surgical Technologists	3
ST 1110	SCCC Surgical Procedures I	3
**STL 1110	MATC Surgical Procedures I Clinical	5
ST 1707	SCCC Surgical Procedures II	4
**STL 1708	MATC Surgical Procedures II Clinical	6

General Education Requirements

Course #	Course Title	Credit Hours
BUS 141	Medical Terminology	3
BSC 205	Microbiology	5

Welding Technology

Program Description

Manhattan Area Technical College's welding program is designed to prepare students for immediate employment into the job market upon completion of the program. In addition to providing the specific technical skills necessary for employment, the program also includes general education knowledge necessary to function in today's society.

Students receive classroom and hands-on training using the latest welding and cutting equipment available in the industry. Students who successfully complete these classes will be capable of passing an AWS structural steel qualification test.

This program aligns with the Kansas Board of Regents curriculum.

Program Admission Requirements

- COMPASS Assessment

A.A.S. Degree Requirements

62 Credit Hours

33 Technical Specialty Credits

14 Technical Elective Credits

15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10	2
WLD 110	Welding Metallurgy	1
WLD 115	Blueprint Reading	2
WLD 120	Oxy-Acetylene Welding	2
WLD 130	Cutting Processes	2
WLD 140	SMAW	3
WLD 145	SMAW 2	4

Year 1 Spring Semester

Course #	Course Title	Credit Hours
WLD 150	GMAW	3
WLD 155	GMAW 2	4
WLD 160	Flux Cored Arc Welding	2
WLD 171	GTAW	3
WLD 176	GTAW 2	2
WLD 190	Welding Project Management OR	
WLD 199	Occupational Work Experience	2
WLD 195	Employability Skills	1

Technical Electives

14 Credit Hours

Course #	Course Title	Credit Hours
AMT 264	Agricultural Power	2
ACC 100	Business Accounting	3
ACC 120	Financial Accounting	3
BTR 262	Agricultural Structures	2
BUS 126	Introduction to Business	3
CIS 100	Software Applications	3
DFT 103	Fundamentals of Drafting	3
DFT 105	CAD Applications	3

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications 3 Credit Hours		3 Required
COM 105	English Composition I	3
COM 110	Technical Writing	3
Math 3 Required		
MAT 109	Technical Mathematics II	3
MAT 110	Intermediate Algebra or higher	3
Additional General Education 9 Required		
CHM 100	Physical Science	4
CIS 100	Software Applications	3
COM 115	Public Speaking	3
PSY 100	General Psychology	3
SOC 100	Introduction to Sociology	3
SOC 200	Marriage and Family	3

Certificate Program Requirements

39 Credit Hours

33 Technical Specialty Credits

6 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10	2
WLD 110	Welding Metallurgy	1
WLD 115	Blueprint Reading	2
WLD 120	Oxy-Acetylene Welding	2
WLD 130	Cutting Processes	2
WLD 140	SMAW	3
WLD 145	SMAW 2	4
MAT 101	Technical Mathematics I or higher	3

Year 1 Spring Semester

Course #	Course Title	Credit Hours
WLD 150	GMAW	3
WLD 155	GMAW 2	4
WLD 160	Flux Cored Arc Welding	2
WLD 171	GTAW	3
WLD 176	GTAW 2	2
WLD 190	Welding Project Management OR	
WLD 199	Occupational Work Experience	2
WLD 195	Employability Skills	1
COM 110	Technical Writing	3

Technical Minor Requirements

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10	2
WLD 130	Cutting Processes	2
WLD 140	SMAW	3
WLD 150	GMAW	3
WLD 171	GTAW	3

Course Descriptions

Accounting

ACC 100 Business Accounting (Fa, Sp) 3 SCH

Prerequisite: None. Business Accounting includes the theory and practice associated with double entry accounting. Special emphasis is placed on the preparation of the documents necessary to complete the accounting cycle. Topics include: transactions, journals, financial statements, schedules, adjustments/closing entries, accounting cycle, cash control, bank reconciliation, and payroll.

ACC 120 Financial Accounting (Fa) 3 SCH

Prerequisite: ACC100 with a grade of C or higher or successful completion of a basic accounting course at the high school or college level. Emphasis is on working with financial reporting and analysis, accounting information systems, internal control, depreciation, inventories, current and long-term assets, current and long-term liabilities, and equity for a merchandising business. Commercial and specialized accounting software is used to solve most problems.

ACC 125 Computerized Accounting (Sp) 3 SCH

Prerequisite: ACC100 or higher with a grade of C or higher. This course covers small business accounting using QuickBooks software. Topics include printing reports, creating a chart of accounts, recording customer and vendor transactions, processing payrolls, creating new companies, working with budgets, exporting to other software, and using the audit trail.

ACC 130 Payroll Accounting (Fa) 3 SCH

Prerequisite: ACC100 or higher with a grade of C or higher. Development of skills in preparing time cards, payroll registers, individual employee earnings records, payroll checks, governmental reports, and journal entries both manually and electronically. Included are the study of government regulations that affect payroll and controls needed in a payroll system.

ACC 140 Managerial Accounting (Sp) 3 SCH

Prerequisite: ACC120 with a grade of C or higher. Emphasis is on accounting for corporations, cash flow and financial statement analysis; departmental and manufacturing accounting; Spreadsheet and commercial accounting software are used to solve problems.

ACC 270 Tax Accounting (Fa) 3 SCH

Prerequisite: None. A study and preparation of income tax returns and a study of tax regulations and forms.

Air Conditioning and Refrigeration

HVA 103 OSHA10 (Sp) 1 SCH

Prerequisite: None. This quality safety training course is intended to inform students about the general hazards of construction work. Completion of the Construction Industry version, which is geared towards new construction projects, major renovation work, and demolition, will prepare students for work that will be completed at the job site.

HVA 104 HVAC Fundamentals (Fa) 3 SCH

Prerequisite: None. This course in refrigeration is designed to include how mechanical refrigerators operate, heat and flow, temperature measurement, pressure, and states of matter, as well as the laws of refrigeration. Safety procedures will also be taught.

HVA 110 HVAC Electricity Fundamentals (Fa) 3 SCH

Prerequisite: None. This course is an introduction to generation of electricity, types of electricity, direct and alternating current circuit fundamentals, magnetism, and electrical components.

HVA 120 Domestic Refrigeration (Fa) 3 SCH

Prerequisite: HVA104. Terminology associated with domestic refrigeration, identification of types of domestic refrigeration, location of data plates and their purpose. Also covered will be sealed system components, their function, operation, as well as locating and solving problems in a safe manner.

HVA 130 Controls & Motors (Fa) 3 SCH

Prerequisite: HVA104. Electric control circuits in ladder diagram, and pictorial form. Also covered will be ice-maker diagrams, comfort cooling controls, central air conditioning controls, pressure motor controls, motor safety controls, defrost controls and humidity controls.

HVA 140 Heating Fundamentals (Fa) 3 SCH

Prerequisite: HVA130, or permission of instructor. Terminology associated with heating and humidification. Heating equipment covered will include gas heating systems, hydronic heating, electric heating and oil heating as well as humidification.

HVA 150 Cooling (Sp) 3 SCH

Prerequisite: HVA130. Focus on operation, installation, and service procedures for heat pumps and complete air conditioning systems.

HVA 151 Advanced Refrigeration (Sp) 3 SCH

Prerequisite(s): HVA104, HVA110, and HVA120 with a grade of C or higher. Students will gain the knowledge of special refrigeration application systems, commercial ice machines, and the ability to troubleshoot and understand the sequence of operation and commercial systems.

HVA 161 EPA 608 (Sp) 1 SCH

Prerequisite(s): HVA104 and HVA120 with a grade of C or higher. Students will gain the knowledge of refrigerant and oil chemistry and management, understand the recovery, recycling, reclaiming, and retrofitting methods that are required by EPA. Students will become 608 Universal certified in handling and purchasing refrigerants.

HVA 170 Design & Blueprint Reading (Sp) 3 SCH

Prerequisite: None. Learn to read plans and blueprints for new construction and be able to calculate loads for heating and cooling systems then design a HVAC system for residential setting.

HVA 181 Commercial Refrigeration (Sp) 4 SCH

Prerequisite(s): HVA104 and HVA120 with a grade of C or higher. This course is the study of condensing units, condensers, refrigerant controls, evaporators, and other components used in commercial refrigeration systems as well as diagnosing, testing, servicing and repair of commercial equipment. Safety for the technician, customer, and equipment are also covered.

HVA 185 Workplace Skills (Sp) 1 SCH

Prerequisite: None. Students will develop good customer relations including problem solving, time management, and work ethic. They will learn to complete retail sales orders and will calculate sales tax and mark ups.

HVA 199 Occupational Work Experience (Sp) 2 SCH
Prerequisite(s): HVA180; faculty recommendation. Supervised work experience in the public and private sector.

Athletics

VAR 110 Varsity Golf (Sp) 2 SCH
Prerequisite: Chosen as member of MATC Golf Team. This course will be an introduction and practice in the fundamentals and play of golf on a regulation course.

Automotive Collision Repair

ACR 104 Non-Structural Analysis and Damage Repair 1 (Fa) 4 SCH
 This course provides an overview of the collision repair career opportunities, orientation, safety training, basics of metal straightening, and GMAW (MIG) welding fundamentals.

ACR 108 Non-Structural Analysis and Damage Repair 2 (Fa) 4 SCH
 This course covers the application of metal finishing techniques as well as performance of GMAW (MIG) welding for collision repair and moveable glass operations. Instruction also includes the application of plastic body filler and metal cutting procedures for non-structural repair.

ACR 114 Non-Structural Analysis and Damage Repair 3 (Fa) 4 SCH
 Students will perform body trim and molding removal and storage; outer body repairs, replacements, and adjustments; and complex metal straightening techniques. Students will understand the difference between direct and non-direct damage.

ACR 118 Non-Structural Analysis and Damage Repair 4 (Sp) 5 SCH
 This course will instruct students in the use of plastic, composite material repairs, and replacements. Students will also receive instruction in weld on panel procedures including the use of GMAW (MIG) welding, panel boding adhesives, and the use of Squeeze Type Resistance Spot Welding.

ACR 124 Paint & Refinishing 1 (Fa) 3 SCH
 Students will identify safety and personal health hazards associated with refinishing operations to include paint mask fit test. Students will also identify different types of substrates and sanding materials relevant to surface preparation and distinguish among the various types of spray equipment.

ACR 128 Paint & Refinishing 2 (Fa) 3 SCH
 Students will distinguish different types of primer materials applied to painted surfaces and bare metal or plastic surfaces. Instruction will also include identification of proper sanding procedures for different repaid situations and the application of proper safety precautions. Instruction in paint gun adjustments for proper primer and paint applications will also be included.

ACR 134 Paint & Refinishing 3 (Sp) 3 SCH
 Students will prepare a vehicle for undercoats and cleaning procedures for refinishing preparation. Students will apply procedures for mixing, catalyzing and activating paint; applying paint to a vehicle using a variety of spray techniques and spray equipment; and analyze and correct paint defects with proper procedures.

ACR 138 Paint & Refinishing 4 (Sp) 4 SC
 Students will prepare panels to be blended using proper paint procedures and practices; perform proper procedures and practices for refinishing plastic and composite parts; and learn how to color match paint through tinting and proper mixing procedures.

ACR 144 Mechanical & Electrical (Sp) 3 SCH
 Students will study mechanical and electrical components that can be damaged as a result of collision and will learn how to find where the damage is located and identify proper repair procedures.

ACR 154 Structural Analysis and Damage Repair 1 (Fa) 2 SCH
 This course will enable students to analyze structural damage and identify safety requirements pertaining to structural damage repairs. Students will identify types of welds used for structural repairs. This course will also study the use of different types of measuring equipment in order to learn and identify basic structural damage conditions.

ACR 158 Structural Analysis and Damage Repair 2 (Fa) 2 SCH
 Students will measure and analyze frame damage to develop a repair plan. This course will provide students the opportunity to analyze and develop a repair plan for unibody vehicles.

ACR 164 Structural Analysis and Damage Repair 3 (Sp) 3 SCH
 Students will raise and clamp a vehicle to perform structural repairs; perform structural straighten repairs on conventional body over frame and unibody vehicles; and learn to use proper welds for structural repairs.

ACR 168 Structural Analysis and Damage Repair 4 (Sp) 3 SCH
 In this course, students will learn how to replace complex structural parts after pulling has been completed. Students will perform complex structural repairs to heavily damaged vehicles and study the role that fixed glass plays in the structural strength of a vehicle in a collision and the importance of proper replacement procedures.

Automotive Technology

AMT 111 Electrical 1 3 SCH
Prerequisite: None. This is an introductory course to automotive electrical systems diagnostics and service. Topics covered are the principles of basic electrical circuits, battery and starting circuits, and an introduction to basic automotive electronics. Diagnosis, testing and unit repair for each circuit are also taught.

AMT 116 Electrical 2 2 SCH
Prerequisite: Complete AMT111 with a grade of C or higher. This advanced course builds on the material learned in AMT111 Electrical Systems I. Subjects include charging and lighting, along with testing, diagnosis and unit repair for each circuit.

AMT 121 Engine Performance 1 3 SCH
Prerequisite: Complete AMT116 with a grade of C or higher, or permission of instructor. This is an introductory course to three areas of engine performance: Ignition, Fuel, and Emission Control systems. An introduction to computer control and electronics as related to ignition, fuel and emission control systems is also covered.

AMT 125 Engine Performance 2 4 SCH
Prerequisite(s): Complete AMT121 with a grade of C or higher, or permission of instructor. This course builds on the material learned in AMT121 Engine Performance I. The areas of automotive electronics including microprocessors, sensors and actuators as related to ignition, fuel and emission control systems are studied. The operation and diagnosis/testing of these systems are also covered.

AMT 151 Steering & Suspension 1 2 SCH
Prerequisite(s): Complete AMT180 with a grade of C or higher, or permission of instructor. Areas taught are automotive/light truck steering and suspension systems theory, design, maintenance and service/repair. Subjects covered are straight axles, short/long arm independent suspension, and McPherson struts.

AMT 152 Steering & Suspension 2 2 SCH

Prerequisite(s): Complete AMT151 with a grade of C or higher, or permission of instructor. This course builds upon the material learned in AMT 151 Steering & Suspension I. Areas taught are steering and suspension geometry, diagnosis of tire wear, wheel alignment, and tire replacement/repair/balancing.

AMT 170 Brakes 1 3 SCH

Prerequisite(s): Complete AMT180 with a grade of C or higher, or permission of instructor. This course is a study of the basic theory and design of modern automotive and light truck braking systems. Adjustment, service and repair of drum and disc brake systems are taught, along with the diagnosis of braking problems.

AMT 171 Brakes 2 2 SCH

Prerequisite(s): Complete AMT170 with a grade of C or higher, or permission of instructor. This course builds upon the material learned in AMT170 Brakes I. Subject areas taught include electronic controls – antilock brake systems, traction and stability control, and hybrid braking systems

AMT 180 Electrical 3 3 SCH

Prerequisite(s): Complete AMT116 with a grade of C or higher, or permission of instructor. This course builds on the material learned in AMT 116 Electrical Systems II. Subjects include instrumentation, accessory, and restraint systems. Testing, diagnosis and unit repair are taught for each subject area.

AMT 200 Automatic Transmissions & Transaxles 1 3 SCH

Prerequisite(s): Complete AMT180 with a grade of C or higher, or permission of instructor. Areas studied are automotive transmission/transaxle theory, design and service. The course introduces the basic concepts, and then proceeds from the simple to the more complex units. Areas included are power flow, hydraulic operation, electronic control, diagnosis and service.

AMT 201 Automatic Transmissions & Transaxles 2 3 SCH

Prerequisite(s): Complete AMT200 with a grade of C or higher, or permission of instructor. This course builds upon the material learned in AMT200 Automatic Transmissions and Transaxles I. Areas studied include automotive transmission/transaxle diagnosis, repair and overhaul.

AMT 205 Manual Transmissions & Transaxles 4 SCH

Prerequisite(s): Complete AMT180 with a grade of C or higher, or permission of instructor. Addressed are areas of modern automotive manual drive-train and axle theory, design, maintenance, service and repair. The course will include flywheel and clutch design, manual transmissions, transfer cases, driveshaft and universal joints, constant velocity joints, differentials (conventional and limited-slip) and drive axles.

AMT 221 Engine Repair 1 2 SCH

Prerequisite(s): Complete AMT125 and AMT180 with a grade of C or higher, or permission of instructor. This class consists of the study of the basic theory, design and service of automotive/light truck engines. The class covers engine removal/replacement and in-vehicle repairs.

AMT 250 Engine Repair 2 3 SCH

Prerequisite(s): Complete AMT221 with a grade of C or higher, or permission of instructor. This course builds upon material learned in AMT 221 Engine Repair I. Subjects taught are diagnosis, inspection, measurement and repair of automotive/light truck engines.

AMT 264 Agricultural Power 2 SCH

Prerequisite(s): None. This course is designed to provide students with the theoretical basis, knowledge, and skills necessary for the repair and maintenance of small gas engines and basic hydraulic systems. Emphasis will be placed on laboratory safety, general laboratory measurements, engine operation, compression, fuel, governor, electrical, cooling, lubrication systems, engine troubleshooting, and basic hydraulics.

AMT 265 Engine Performance 3 3 SCH

Prerequisite(s): AMT125 with a grade of C or higher, or permission of instructor. This course builds on the material learned in AMT125 Engine Performance II. The course begins with a review of ignition, fuel and emission control systems. Diagnostic concepts as applied to Asian and advanced General Motors, Ford and Chrysler systems are studied. The course ends with a section on alternative power sources.

AMT 270 Electrical 4 2 SCH

Prerequisite(s): Complete AMT180 with a grade of C or higher, or permission of instructor. This advanced course builds on the material learned in AMT 111, 116, and 180. Areas of study are body control modules, antitheft/security systems and automotive networking/multiplexing systems. An introduction to hybrid vehicles is also included in the course.

AMT 275 Heating & Air Conditioning 4 SCH

Prerequisite(s): Complete AMT270 with a grade of C or higher, or permission of instructor. Areas studied are the theory, design and service/repair of automotive climate control systems. Safety practices and troubleshooting of heating, ventilation, and air conditioning (HVAC) systems used on cars and light trucks are taught.

Biotechnology

* Denotes course delivered online

** Denotes face-to-face in a student laboratory

*** BIO 150 Basic Laboratory Techniques 4 SCH**

Prerequisite: GED or High School Diploma. This course will prepare the student to practice safely and efficiently in the laboratory. Topics covered will include proteomics, laboratory safety, lab math, cGMP/cGLP, documentation, aseptic techniques, QA/QC, basics of microbiology, laboratory equipment, and job skills.

*** BIO 210 Laboratory Operations 4 SCH**

Prerequisite: None. This course is an introduction to technical writing, technical math and common regulations used in the laboratory. The class offers practice in document design and editing. The types of correspondence include memos, letters, e-mail, reports, and instructional manuals for the science environment. The laboratory math component prepares students for the advanced problem solving applications associated with laboratory practice.

*** BIO 225 Laboratory Safety 2 SCH**

Prerequisite: None; *Co-requisite:* BIO226. This course will enable the student to practice safety in the laboratory, including the secure use and handling of biological and chemical materials in a laboratory setting. Topics covered will include safety procedures in Biosafety Level 2 and 3 labs, safety with infectious disease, food security issues, safe handling of hazardous biological and chemical materials and safe practices with small animals in laboratory settings.

**** BIO 226 Laboratory Safety Lab 1 SCH**

Prerequisite: None; *Co-requisite:* BIO225. This laboratory course will enable the student to practice general safety procedures as well as the secure use and handling of biological and chemical materials in various laboratory environments. Other topics covered will include safety procedures in Biosafety Level 2 and 3 labs, infectious disease, food security and national security agencies and regulations.

*** BIO 250 Biotechnology Techniques 3 SCH**

Prerequisite(s): Complete BIO225/226 with a grade of C or higher; Co-requisite: BIO251. This course introduces the basic skills and knowledge necessary to work in a biological or chemical laboratory. Emphasis is placed on good manufacturing practices, safe practice, solution preparation, and equipment operation and maintenance following standard operating procedures.

**** BIO 251 Biotechnology Techniques Lab 2 SCH**

Prerequisite(s): Complete BIO225/226 with a grade of C or higher; Co-requisite: BIO250. This laboratory course introduces the basic skills and knowledge necessary to work in a biological or chemical laboratory. Emphasis is placed on good manufacturing practices, safe practice, solution preparation, and equipment operation and maintenance following standard operating procedures.

*** BIO 260 Molecular Techniques 2 SCH**

Prerequisite(s): Cumulative GPA of 2.00; BIO225: Laboratory Safety with a grade of C or higher; Concurrent with BIO261. This course will prepare students to use general strategies to work with nucleic acids in the biotechnology lab. Specific methods include DNA cloning activities, plasmid purification, transformation of bacterial cells, restriction enzyme analysis, PCR, Southern blot, and micro arrays.

**** BIO 261 Molecular Techniques Lab 3 SCH**

Prerequisite(s): Cumulative GPA of 2.00; BIO 225: Laboratory Safety with a grade of C or higher; Concurrent with BIO 260. This course will prepare students to use general strategies to work with nucleic acids in the biotechnology lab. Specific methods include DNA cloning activities, plasmid purification, transformation of bacterial cells, restriction enzyme analysis, PCR, Southern blot, and micro arrays.

*** BIO 270 Cell Culture Techniques 2 SCH**

Prerequisite(s): Complete BIO260/261 with a grade of C or higher, or permission of instructor; Concurrent with BIO271. Students will maintain various mammalian cell lines in culture during this course using media prepared in previous class (BMP I) without contamination. The goal is to incorporate adherent, semi-adherent and suspension cell lines. Culture techniques will be extended to plant cells, insects, fungi and fish cells if possible. While the mammalian cultures are being maintained, students will learn aseptic techniques, cell passage, cryopreservation, cell viability, culture media preparation, fetal bovine serum selection, and cell counting.

**** BIO 271 Cell Culture Techniques Lab 3 SCH**

Prerequisite(s): Complete BIO260/261 with a grade of C or higher, or permission of instructor; Concurrent with BIO270. This laboratory course introduces students to the basic techniques used in culturing cells. Topics covered include sterile and aseptic technique, media preparation, cell count and viability, cryopreservation, subculturing, and research applications using cell cultures.

*** BIO 280 Biomanufacturing Techniques 2 SCH**

Prerequisite(s): Cumulative GPA 2.00; BIO225: Laboratory Safety with a grade of C or higher; Concurrent with BIO281. This course will enable students to work with small-scale laboratory processes using prokaryotic or eukaryotic cells in procedures used with a bioreactor to produce a biomass. Topics include bioreactor preparation and operation, protein purification methods, enzyme handling and assay methods, protein assay methods, Western blot/enzyme and antibody probe techniques. Upon completion, students should be able to set up a bioreactor, grow prokaryotic cells, and isolate and collect various fractions derived from the protein product.

**** BIO 281 Biomanufacturing Techniques Lab 3 SCH**

Prerequisite(s): Cumulative GPA 2.00; BIO225: Laboratory Safety with a grade of C or higher; Concurrent with BIO280. This course will enable students to work with small-scale laboratory processes using prokaryotic or eukaryotic cells procedures used with a bioreactor to produce a biomass. Topics include bioreactor preparation and operation, protein purification methods, enzyme handling and assay methods, protein assay methods, Western blot/enzyme and antibody probe techniques. Upon completion, students should be able to set up a bioreactor, grow prokaryotic cells, and isolate and collect various fractions derived from the protein product.

BIO 290 Biotechnology Internship 5 SCH

Prerequisite(s): Successful completion of all other courses in the Advanced Biotechnology Certificate program. This internship allows students to gain real job experience in the biotechnology industry before completion of the certificate. The intern will be placed in an industry involved in one of the program's focus areas.

Building Trades

BTR 102 Safety Orientation (OSHA 10) (Fa) 1 SCH

Prerequisite: None. This quality safety online training course is intended to inform students about the general hazards of construction work. Completion of the Construction Industry version, which is geared towards new construction projects, major renovation work, and demolition, will prepare students for work that will be completed at the job site.

BTR 106 Introductory Craft Skills (Fa) 3 SCH

Prerequisite: None. This course will build foundational skills in the construction industry. Students will complete nine modules including modules in the greening of the industry as well as an introduction to construction drawings.

BTR 116 Carpentry Basics (Fa) 4 SCH

Prerequisite: BTR106 with a grade of C or higher. This course is designed to provide the student with a fundamental knowledge of the basic steps involved in all construction projects. While each carpentry task is somewhat different, most involve the same basic steps: working from blueprints, laying out the structure, assembling the structure, and checking the work afterward.

BTR 121 Floors, Walls & Ceiling Framing (Fa) 4 SCH

Prerequisite: BTR116 with a grade of C or higher. This course will cover framing basics as well as the procedures for laying out and constructing a wood floor using common lumber as well as engineered building materials. The course will also describe the procedures for laying out and framing walls and ceilings including roughing-in door and window openings, construction corners and partition T's, bracing walls and ceilings, and applying sheathing.

BTR 131 Roof Framing (Fa) 3 SCH

Prerequisite: BTR121 with a grade of C or higher. This course describes the various kinds of roofs and contains instructions for laying out rafters for gable roofs, hip roofs, and valley intersections. Coverage includes both stick-built and truss-built roofs.

BTR 136 Windows, Doors & Stairs (Fa) 3 SCH

Prerequisite: BTR131 with a grade of C or higher. This course describes the various types of windows, skylights, and exterior doors, and provides instructions for installing them. This course also includes instructions for installing weather-stripping and locksets. Additionally, the course will introduce students to the various types of stairs and the common building code requirements related to stairs. The module focuses on the techniques for measuring and calculating the rise, run, and stairwell openings, layout out stringers, and fabricating basic stairways.

BTR 141 Cabinet Installation / Kitchen Design (Sp) 3 SCH

Prerequisite: BTR136 with a grade of C or higher. This course covers the application of carpentry to construct cabinets used in residential carpentry. Topics covered include kitchen location, design, arrangement of cabinets, lighting, standard cabinet sizes, cabinet materials, drawer guides, the work triangle, and building of cabinet units.

BTR 150 Drywall, Insulation & Ventilation for Residential Construction (Sp) 5 SCH

Prerequisite: BTR141 with a grade of C or higher. This course presents instruction, application, and practice in drywall, insulation, and proper ventilation for residential construction.

BTR 160 Interior Finish Carpentry (Sp) 5 SCH

Prerequisite: BTR150 with a grade of C or higher. This course presents instruction, application, and practice in interior finish carpentry including door jambs, ceiling mold, hanging doors, installing baseboards, suspended ceilings, trip, painting, and molding used for residential construction.

BTR 171 Painting, Finishing & Decorating (Sp) 5 SCH

Prerequisite: BTR160 with a grade of C or higher. The purpose of this course is for students to prepare and apply the necessary finishes to enhance the project house.

BTR 262 Agricultural Structures (Fa, Sp) 2 SCH

Prerequisite: None. The course is designed to provide students with the theoretical basis, knowledge and skills necessary for the construction/fabrication of agricultural structure type projects. Emphasis will be placed on: laboratory safety, general laboratory measurements, material selection, basic construction techniques, electrical theory and construction, and basic surveying.

Business Administration**BUS 111 Personal Finance (Fa, Sp) 3 SCH**

Prerequisite: None. This course focuses on basic skills in the management of money with an emphasis on the viewpoint of the individual. Topics covered include budgeting, bank accounts, credit cards, borrowing, real estate and housing, transportation, savings, investments, insurance, taxation, retirement, and estate planning.

BUS 120 Business English (Fa, Sp) 3 SCH

Prerequisite: None. This course will enable the student to master language principles for the information age. The student will develop language skills while gaining computer experience. The student will gain expertise in basic rules of English grammar, punctuation, capitalization, and number style.

BUS 125 Business Communication (Fa, Sp) 3 SCH

Prerequisite(s): CIS100 and BUS120 with a grade of C or higher. Areas of communication studied and applied are business writing, listening skills, one-to-one oral communication, personal communication styles, and making presentations. Grammar, usage, and style will be reviewed and reinforced.

BUS 126 Introduction to Business (Fa, Sp) 3 SCH

Prerequisite: None. Foundation course about business and its importance in a free market economy. The course includes the study of types of business ownership and operations. Business terminology is used to understand and interpret business news and information.

BUS 130 Records & Information Management (Fa, Sp) 3 SCH

Prerequisite: CIS100 with a grade of C or higher. Instruction in the creation, maintenance, protection, and disposition of records stored in a variety of media forms. Instruction will include the ARMA (Association for Records Managers and Administrators, Inc.) rules for filing, retrieving documents, and specialized functions such as micrographics and optical disc technology. Also included are laws relating to records management.

BUS 141 Medical Terminology (Fa, Sp) 3 SCH

Prerequisite: None. This course will enable the student to use prefixes, suffixes, combining forms, and word roots to build medical terms; analyze component parts of medical terms to determine meaning; identify, pronounce, and define common anatomical terms related to the major body systems; and define basic terms and abbreviations used in documenting health records.

BUS 146 Medical Billing & Coding (Fa) 3 SCH

Prerequisite: BUS141 with a grade of C or higher. This course will enable the student to develop a basic knowledge of the national diagnostic and procedural coding systems and to simplify the process of filing claim forms. The student will be introduced to the major nationwide medical insurance programs.

BUS 148 Advanced Medical Coding (Sp) 3 SCH

Prerequisite: BUS146 with a grade of C or higher. This course will enable the student to further develop a basic knowledge of the national diagnostic and procedural coding systems. The student will be able to accurately assign ICD-9-CM diagnosis codes, CPT procedure codes and modifiers, and HCPCS supply and medication codes to outpatient and inpatient services.

BUS 185 Business Ethics & Human Relations (Fa, Sp) 3 SCH

Prerequisite: None. This course introduces contemporary and controversial ethical issues facing the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. The course emphasizes employability skills such as communication, work habits and attitudes, ethics, conflict management, motivation and problem solving, self-concept, perception, self-awareness, personality, values and communications.

BUS 199 Business Internship (Fa, Sp) 1 to 3 SCH

Prerequisite: Completion of 20 program credit hours with 3.0 or higher GPA and permission of advisor. Business Internship will give students an opportunity to work in a business or governmental agency to apply competencies achieved in previous courses to current office conditions. Each student will be evaluated by the instructor and the supervisor in the office.

BUS 210 Workstation Management (Fa) 3 SCH

Prerequisite: CIS100 with a grade of C or higher. This course is a study of computer components, software, and usage. Instruction will include troubleshooting software problems, preparing proposals for system purchases, performing Internet research, and safeguarding integrity of system components.

BUS 220 Administrative Procedures (Fa, Sp) 3 SCH

Prerequisite: CIS100 with a grade of C or higher. The focus will be on skills required in today's office. Topics include telephone, mail, business equipment, office layout and ergonomics, and meeting and travel planning. Time management, decision-making, critical thinking, prioritizing, and teamwork will be emphasized.

BUS 255 Principles of Management (Fa) 3 SCH

Prerequisite: None. This course teaches the basic components of management: planning, organizing, leading, and controlling. The course will focus on the fundamentals of management as they are practiced today.

BUS 275 Professional Development (Fa, Sp) 2 SCH

Prerequisite: None. A study of workplace behavior; development of personal, educational, and professional career goals; and understanding of effective job-seeking skills. Also included is an overview of laws relating to labor relations, contracts, and personnel matters.

Computer Software**CIS 099 Computer Basics (Sp) 1 SCH**

Prerequisite: None. This course will enable the student to obtain competency in basic computer operation. This class is for the student who has never used a computer or has limited use of the Windows operating system.

CIS 100 Software Applications (Fa, Sp) 3 SCH

Prerequisite: Demonstrated ability to keyboard 20nwam. This course will enable students to work with application software in a career setting or for personal use. Using a project-based approach, students develop an introductory-level competency in word processing, spreadsheet, database, and presentation software. Computer concepts are covered as well.

CIS 116 Spreadsheet Management (Fa, Sp) 2 SCH

Prerequisite: CIS100 Software Applications with a grade of C or higher. This course covers intermediate-level concepts of spreadsheet software. Using typical business scenarios, the student will perform "what-if" analyses, manage data in worksheets with tables and database functions, and use multiple worksheets to build consolidated statements. The applications and principles learned in this course are relevant to any career field.

CIS 121 Word Processing (Fa, Sp) 2 SCH

Prerequisite(s): CIS100 Software Applications with a grade of C or higher. This course covers intermediate-level concepts of word processing software. Using typical business scenarios, the student will create documents containing graphical elements such as tables, columns, and SmartArt. Automated features such as merge applications and use of building blocks will be used. The applications and principles learned in this course are relevant to any career field.

CIS 126 Database Management (Fa, Sp) 2 SCH

Prerequisite: CIS100 Software Applications with a grade of C or higher. Database Management includes designing and creating a database; changing and deleting records; creating forms and reports, including custom forms and reports; changing structures; building relationships and lookup fields; using query wizards and advanced query techniques; and macros.

CIS 150 Web Page Applications (Fa, Sp) 3 SCH

Prerequisite: None. Web Page Applications includes planning and designing a web page, using both HTML and specialized software, working with templates, editing features, creating forms, using frames, and providing knowledge in the maintenance of web sites.

CIS 155 Integrated Applications (Fa, Sp) 2 SCH

Prerequisite(s): CIS116 Spreadsheet Management, CIS121 Word Processing, and CIS126 Database Management, each with a grade of C or higher. Integrated Applications takes students' baseline software skills to increased proficiency. Word processing, spreadsheet, database, presentation, and desktop publishing software will be integrated to complete real-world projects. Cloud computing will be utilized.

Computer-Aided Drafting Technology**DFT 103 Fundamentals of Drafting (Fa, Sp) 3 SCH**

Prerequisites: DFT105 with a grade of C or higher, or concurrent enrollment. Basic concepts and skills of mechanical drawing using conventional, computer-aided drafting, and use and knowledge of tool, supplies, and equipment. Mechanical drafting fundamentals, using conventional drafting, will be presented, along with an explanation of standard drafting practices. Topics covered will include drafting equipment, media, sketching, lettering and lines, geometric construction, multi-views, auxiliary views, sections, pictorials, and dimensioning. Practical and realistic math problems associated with drafting topics will also be covered. Must have a grade of C or higher to pass.

DFT 105 CAD Applications (Fa, Sp) 3 SCH

Prerequisites: None. Concepts and skills of AutoCAD 2D and 3D applications. Topics include setup, drawing, editing, layer, and line-type management, making prints, annotations and dimensioning, inquiry, and 3D dimensional drawing. Must have a grade of C or higher to pass.

DFT 110 Engineering Graphics (Fa, Sp) 3 SCH

Prerequisites: DFT105 with a grade of C or higher. The Engineering Graphics course is the study of fundamental concepts with an emphasis on logical reasoning, visualization, and practical applications of descriptive geometry and orthographic projection. This course will run concurrent with DFT 105 utilizing AutoCAD software.

DFT 160 Advanced CAD Applications (Fa, Sp) 3 SCH

Prerequisite: DFT105 with a grade of C or higher, or by permission of instructor. An introduction and overview of three-dimensional (3D) CAD and a review of the basic concepts of 2D CAD in a lecture and lab format. The course will explain 3D CAD drafting techniques, commands, and terminology. Additional topics covered will include external references, paper space vs. model space, dimensioning, scaling, UCS manipulation, slicing and rendering/ modeling of three-dimensional solids. Instruction is through lectures, quizzes and CAD drawing lab assignments.

DFT 165 MicroStation I (Fa, Sp) 3 SCH

Prerequisite: DFT105 with a grade of C or higher (or concurrent enrollment) or instructor approval. This is an activity based course that develops the knowledge and skills using MicroStation. The course will explain MicroStation drafting techniques, commands and terminology. Topics covered will include line weight, dimensioning, scaling, editing techniques, and plotting. Instruction is presented online mediated learning lectures, quizzes and drawing assignments.

DFT 170 Structural Drafting: Steel (Fa) 3 SCH

Prerequisite: DFT103, DFT105 with a grade of C or higher. An activity-based course that develops the knowledge and skills necessary for entry-level employment in structural steel detailing within the framework of architectural drawing. Includes the framework drawings required for light commercial and residential buildings plus the framework drawings for larger buildings and construction, such as bridges and bents. Topics covered include information and technique on structural steel detailing for both light commercial and residential steel, heavy steel framework building, and other construction, such as bridges and bents. American Institute of Steel Construction standards will be followed. Weldment and fabrication of materials will be included in the course. CAD drawings are required to complete the assignments.

DFT 180 Civil Drafting I: Site Plan (Fa, Sp) 3 SCH

Prerequisite: DFT105 with a grade of C or higher, or by permission of instructor. Civil Drafting I: Site Plan/Details applies principles of civil layout practice to CAD drafting assignments. Students are required to complete problems in surveying traverse and plotting techniques, and interpreting surveyor's notes to construct topographic layouts. Topics to be covered include landscape details, commercial building plat layout and a residential subdivision. Instruction is presented online mediated learning lectures, quizzes and drawing assignments.

DFT 215 Commercial Architectural Drafting (Sp) 3 SCH

Prerequisite: DFT105 with a grade of C or higher, or by permission of instructor. Commercial Architectural Drafting is an overview of the basic concepts of commercial construction and detailing, with an emphasis on the commercial architectural aspects of the CAD drafting techniques, commands, and terminology. The student will be using AutoDesk Revit® software during this course, with supplemental projects being completed in AutoCAD.

DFT 225 Residential Architectural Drafting (Fa) 3 SCH

Prerequisite: DFT105 with a grade of C or higher; or permission of instructor. This course is an overview of the basic concepts of residential construction and detailing. Emphasis is on the residential architectural aspects of CAD drafting techniques and design aspects. Instruction includes online mediated learning lectures, quizzes and CAD drawing assignments. The student will be using the "Revit Architecture" software package during this course as the major software package.

DFT 230 Machine Drafting I: Details (Fa, Sp) 3 SCH

Prerequisite: DFT103, DFT105 with a grade of C or higher. Development of skill in the use of handbooks, product catalogues and resource material to detail machine parts. Students are required to use catalogues to calculate size specifications of standard machine parts and assign tolerance for proper fit. The course requires satisfactory completion of CAD drawing assignments using Autodesk Inventor software.

DFT 235 Machine Drafting II: Assemblies (Fa, Sp) 3 SCH

Prerequisite: DFT103, DFT105, DFT230 with a grade of C or higher. Development of skill in the use of handbooks, product catalogues and resource material to detail catalogues to calculate size specifications to standard machine parts and assign tolerance for proper fit. The course requires satisfactory completion of CAD drawing assignments using Autodesk Inventor software.

DFT 251 Occupational Portfolio (Fa, Sp) 1 SCH

Prerequisite(s): DFT103, DFT105, DFT110, DFT165, all with a grade of C or higher. This course covers areas associate with job search. Topics include cover letter, resume, letter of application, interview techniques, and portfolio development. Collection and presentation of drafting projects will be put into portfolio format.

DFT 266 MicroStation 2 (Fa) 2 SCH

Prerequisite: DFT165 with a grade of C or higher. The MicroStation 2 drafting course will further the students' working knowledge of the MicroStation software. The course will include instruction in advanced 2D drafting and basic 3D drafting tools using the MicroStation software.

DFT 270 Revit Architecture (Fa, Sp) 3 SCH

Prerequisite: None (CAD experience advisable). The Revit Architectural Drafting course will enable the student to create/draw a residential/commercial building and section views, place mechanical equipment and plumbing items using Revit Architecture software. The instruction will include walls, roofs, placing doors/windows, stairs/ramps, mechanical systems, electrical systems, and creating schedules.

DFT 271 Mechanical Drafting: Revit MEP (Fa) 3 SCH

Prerequisite: None (CAD experience advisable). The Revit MEP drafting course will enable the student to create/draw residential/commercial buildings' mechanical, electrical, and plumbing systems. The instruction will include the design and drawing of mechanical (HVAC), electrical, and plumbing systems, and the creation of schedules.

DFT 285 Civil Drafting II (Fa, Sp) 3 SCH

Prerequisites: DFT180 with a grade of C or higher. This course will give the student a base working knowledge of the AutoDesk Civil 3D software and the civil theories and math behind those theories. Students will apply the principles of civil layout practices to drafting assignments. Students are required to complete problems in civil construction detailing and a Civil 3D surface assignment. Instruction is presented through online mediated learning lectures, quizzes, and drawing assignments. The course requires satisfactory completion of drawing assignments.

Continuing Education / Workforce Development**Computer Courses****BUS 100 Keyboarding 1 SCH**

Prerequisite: None. Learn keyboarding skills or improve your current skill level. This course emphasizes proper keyboarding techniques, proofreading, speed, and accuracy.

BUS 105 Data Entry 1 SCH

Prerequisite: None. Students will learn procedures and practice equipment to develop skill in entering alphabetic and numeric data accurately and quickly.

Allied Health**ALH 051 Certified Nurse Aide Update By Appt.**

Prerequisite: Kansas CNA license, inactive status. Designed for CNAs who have held the Kansas CNA but are not inactive (lapsed) and want to reactivate their CNA status. The Update is scheduled by appointment and may include assessment of written and oral knowledge as well as discussion and demonstration of CNA skills. The instructor notifies KDHE of successful completion; the certification is re-activated.

ALH 060 Certified Medication Aide (CMA) 3 SCH

Prerequisite: Kansas CNA certificate and CASAS reading test (administered at MATC). Required for employment as medication aide in Kansas long-term care facilities. Classroom, online, and lab assignments prepare students for clinical experiences in area care facilities. After successful course completion, students must pass the state CMA test administered by the Kansas Department of Health and Environment (KDHE) to earn CMA credential.

ALH 061 CMA Update 10 clock hours

Prerequisite: CMA credential. This course follows guidelines specified by the Kansas Department of Health and Environment (KDHE) for required continuing education and recertification for certified medication aides.

ALH 070 Home Health Aide 1 SCH

Prerequisite: Active Kansas CNA credential. This course is designed for Certified Nurse Aides who wish to work for a home health agency and care for clients in their homes. Students successfully completing this course will take a test administered by the Kansas Department of Health and Environment (KDHE) to earn HHA certification.

ALH 080 Restorative Aide 1 SCH

Prerequisite: Kansas CNA (active). Develops skills needed to apply the occupational and physical therapists' orders to daily nursing care. Includes use of physical, occupational and restorative therapies. Training concludes with an internal assessment, and upon successful completion, RA certification is earned.

ALH 090 Intravenous (IV) Therapy 2 SCH

Prerequisite: Kansas LPN. This course is designed to prepare the LPN for the LPN IV role. Classroom instruction, labs and clinical experiences are included in the training. An RN will also find the course beneficial in maintaining competency.

ALH 100 Certified Nurse Assistant (CNA) 5 SCH

Prerequisite: CASAS reading test (administered at MATC), or hold college degree, or have completed college level English composition course with a grade of C or higher. The course is designed to provide the student with the knowledge and skills necessary to perform basic health care services. It prepares the student to function in the role of nurse assistant under the supervision of a Registered Nurse or Licensed Practical Nurse. This course is designed to meet the curriculum requirements of the Kansas Department of Aging and Disability (KDADS). Satisfactory completion of the course makes the student eligible to take the State CNA certification. 50 clock hours lecture/ 50 hours clinical/lab.

ALH 101 Phlebotomy 3 SCH

Prerequisite: None. Students will develop knowledge of the healthcare delivery system, medical terminology, infection control, and safety. They will also practice techniques for specimen collection, equipment use, and quality control in a lab setting.

Education**EDU 090 Teaching Online with MATC No Credit**

This course will provide faculty the opportunity to be an online student before becoming an online instructor. The student will develop an increased awareness of effectively implementing technology into course materials. In addition, the student will enhance communication skills that apply to the online learning environment. Characteristics necessary of a successful online instructor and an online student will be analyzed. Lastly, basic course design principles will be applied to content specific to the student.

EDU 091 Developing a Course for Online Delivery No Credit

This course will provide faculty an opportunity to apply the knowledge gained from EDU 090 – Teaching Online with MATC. During this course, the faculty member will create the specified course within MATCOnline. Utilizing the Online Course Development Guidelines and Rubric, the faculty member will develop a complete course for future delivery. When the faculty member believes the course to be accurate and complete, the course will then be evaluated using this same document. The evaluation process includes a demonstration of the course to department/online committee/VPIS.

Technical Training**Autodesk Inventor 3 SCH**

Autodesk® Inventor® software provides a comprehensive set of design tools for producing, validating, and documenting digital prototypes. The Inventor model is a 3D digital prototype that helps users visualize, simulate, and analyze how a design will work under real-world conditions before a product or part is ever built.

Beginning Welding 3 SCH

This course is for anyone interested in learning welding techniques: electric arc, oxyacetylene and metal inert gas (MIG) welding are covered. Students must furnish welding gloves, helmet and pliers.

Tiered Welding Training No Credit

Open entry welding training for every skill level! Students' welding skills are assessed by MATC welding faculty to determine placement. Call MATC at 785.320.4566 to schedule assessment.

Tier 1: Basic Welding Skills Training – for those with little or no welding experience

Saturdays
8:00am-5:00pm

\$300

Tier 2: Skills Development – for welders with limited experience who need additional training to prepare for employment

Tuesdays
6:30pm-9:30pm

\$200

Tier 3: Skills Refresher – for welders with experience who need to prepare for certification and specific employment qualifications

Mondays
6:30pm-9:00pm

\$100

EPA 608 Exam Prep**No Credit**

For HVAC professionals who desire to take the EPA 608 certification exam. Sessions will be held on two consecutive Fridays from 8:00am-4:00pm. The exam will be given on the Saturday immediately following the second class from 8:00am-11:00am. Tuition of \$225 includes \$40 test fee and \$5 for review book. One session will be offered during Fall semester; one during Spring semester.

Dental Hygiene**DHT 102 Oral Anatomy, Head and Neck Embryology, and Histology 4 SCH**

Prerequisite: Acceptance into the Dental Hygiene program. An introduction to anatomical systems with emphasis placed on head and neck anatomy. The support oral structures, embryology of the teeth, and tooth nomenclature are covered. Topics include the physiology and morphology of the deciduous and the permanent teeth along with basic dental terminology.

DHT 103 Dental Radiography 3 SCH

Prerequisite: Acceptance into the Dental Hygiene program and proof of current American Heart Association CPR certification. A study of radiation physics, hygiene, and safety theories with emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. This includes: exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, and radiographic techniques.

DHT 105 Dental Hygiene Clinic I: Pre-Clinic 5 SCH

Prerequisite: Acceptance into the Dental Hygiene program. This course will introduce theories, rationales, and foundational knowledge for performing basic dental hygiene skills by preparing the student for overall patient care in the clinical setting. This will include the use of basic dental equipment and instruments, patient assessment, treatment planning, documentation, patient education, preventative treatment, oral hygiene instruction, and supportive procedures. Emphasis is on the principles, procedures, and professionalism used when performing comprehensive oral preventative and therapeutic care. Under the direction of the course instructor, students will apply these newly-learned principles in a clinical setting, offering the opportunity to integrate hands-on skills with entry-level critical thinking and problem-solving skills.

DHT 106 Dental Hygiene Clinic II 5 SCH

Prerequisite: Successful completion the first semester of the Dental Hygiene program with a grade of C or higher in all courses, a cumulative GPA of 2.5 or higher, and proof of current Cardiopulmonary Resuscitation/Basic Life Support Certification. This course prepares the student for overall patient care in the clinical setting including use of basic dental equipment and instruments, patient assessment, periodontal treatment planning, documentation, patient education, preventative treatment, oral hygiene instruction and supportive procedures. Under the direction of an instructor, students integrate hands-on skills with entry-level critical thinking and problem-solving skills. Clinical experiences are unpaid learning experiences.

DHT 108 Periodontology 3 SCH

Prerequisite(s): Successful completion of the first semester of the Dental Hygiene program with a grade of C or higher in all courses and a cumulative GPA of 2.5 or higher. This course provides the dental hygiene student with an in-depth study of periodontal disease including the inflammatory process and its relationship to the pathogenesis of periodontal disease; identification of etiological factors; classification of periodontal disease following a complete periodontal assessment; recognition of gingival conditions and risk assessment; description of periodontal surgical procedures; the recognition of periodontal emergencies; and the effectiveness of plaque control and nonsurgical periodontal therapy. Evidence-based decision making and theoretical concepts are integrated for clinical application via case based learning.

DHT 109 Preventive Dental Hygiene 2 SCH

Prerequisite: Acceptance into the Dental Hygiene program. This course introduces the student to the role of the dental hygienist in the dental health care system and the basic concepts of disease prevention and health promotion. Communication and behavior modification skills are emphasized to facilitate the role of the dental hygienist as an educator.

DHT 110 Oral Pathology 3 SCH

Prerequisite(s): Completion of DHT102, DHT103, and DHT105 with a grade of C or higher and a minimum GPA of 2.5. The principles of general pathology in relationship to diseases of the teeth, soft tissues and supporting structures of the oral cavity are the focus of this course. The importance of early recognition of abnormal conditions in the mouth emphasized. Inflammation and healing, growth disturbances, blood and lymph nodes, GI and urinary tracts, the endocrine system and microbiologic diseases will be discussed.

DHT 112 Dental Hygiene Externship 1 SCH

Prerequisite(s): The student must have completed at least one semester of full-time dental hygiene education, including all pre-clinical courses with a C or higher and a cumulative GPA of 2.5. This course is designed to provide the dental hygiene student exposure to a diverse population and help develop awareness of the dental practice operations and opportunities within the field of public health dentistry.

DHT 115 Nutrition and Oral Health 2 SCH

Prerequisite(s): Successful completion of all first semester courses with a GPA of 2.5. A study of general nutrition and nutritional biochemistry with emphasis on the effects of nutrition and dental health. Analysis of diet and application of counseling strategies to assist the patient in attaining and maintaining optimum oral health are stressed.

DHT 205 Dental Hygiene Clinic II 5 SCH

Prerequisite(s): Successful completion of the first year of the Dental Hygiene program with a grade of C or higher in all courses, a cumulative GPA of 2.5 or higher, and proof of current American Heart Association Cardiopulmonary Resuscitation/Basic Life Support Certification. This course builds upon and expands the clinical skills developed in Dental Hygiene Clinic I and II while providing opportunities for direct patient care under instructor supervision. In addition to the foundational skills developed in previous clinic courses, students will implement advanced instrumentation techniques and procedures and prepare individualized comprehensive dental hygiene care plans to meet the needs of clinical patients.

DHT 206 Dental Materials 3 SCH

Prerequisite(s): Successful completion of the first year of the Dental Hygiene program with a C or higher in all courses and a cumulative GPA of 2.5 or higher. The study of dental materials including the physical and chemical properties and applications of the various materials that are used in dentistry. Student experiences include the manipulation of dental materials in the lab setting.

DHT 207 Pharmacology 3 SCH

Prerequisite(s): Successful completion of DHT102 and DHT110 with a grade of C or higher and a cumulative GPA of 2.5 or higher. This course is designed to help dental hygiene students understand pharmacology and methods of medication as it relates to the practice of dentistry. The course focuses on adverse drug reactions, pharmacological effects, and their usual indications and contraindications. It emphasizes the clinical application of topical and local anesthesia. It discusses systemic toxicity and local complications to prepare students for the prevention and management of emergencies that may develop during treatment as well as sedation methods and general anesthesia.

DHT 208 Dental Pain Management 3 SCH

Prerequisite(s): Successful completion of the first year of the Dental Hygiene program with a grade of C or higher in all courses and a cumulative GPA of 2.5 or higher. In addition, students will need to have current CPR/BLS certification. A current CPR/BLS card must be on file for students to participate in the laboratory portion of the course. This course is designed to prepare dental hygiene students for the safe and effective administration of local anesthesia and nitrous oxide sedation. Included in the course are content areas in head and neck anatomy, physiology, patient assessment, pharmacology, alternative methods of pain and anxiety control, and emergency management of patients while administering local anesthesia or nitrous oxide. The laboratory sessions are utilized to allow opportunities for application of the course material and provide actual experiences in the administration of local anesthetics and nitrous oxide.

DHT 210 Dental Hygiene Clinic IV 5 SCH

Prerequisite(s): Successful completion of the first three semesters of the Dental Hygiene program with a grade of C or higher in all courses and a cumulative GPA of 2.5 or higher, and proof of current American Heart Association Cardiopulmonary Resuscitation/Basic Life Support Certification. This course builds upon and expands the clinical skills developed in Dental Hygiene Clinic I, II, and III while providing opportunities for direct patient care under instructor supervision in a variety of clinical settings. In addition to the foundational skills developed in previous clinic courses, students will implement advanced instrumentation techniques, perform adjunctive therapies and supportive procedures, and prepare individualized comprehensive dental hygiene care plans to meet the needs of advanced clinical patients.

DHT 211 Ethics, Legal Issues, and Kansas Law 2 SCH

Prerequisite(s): Successful completion of semesters one, two, and three of the Dental Hygiene program with a C or higher and a cumulative GPA of 2.5. This course examines of the dental hygienist's role in practice settings including dental office management, employment considerations, resume preparation, and job interviewing. Emphasis is on the laws governing the practice of dentistry and dental hygiene and the ethical standards established by the dental hygiene profession.

DHT 212 Community Public Health and Education 3 SCH

Prerequisite(s): Successful completion of the first three semesters of the Dental Hygiene program with a C or higher and a cumulative GPA of 2.5. Study of the principles and concepts of community public health and dental health education with an emphasis on community assessment, educational planning, implementation, and evaluation.

DHT 213 Special Needs 2 SCH

Prerequisite(s): Successful completion of the first three semesters of the Dental Hygiene program with a "C" or higher and a cumulative GPA of 2.5. Introduction to dental hygiene care for the medically or dentally compromised patient and special needs patient. Emphasis is on supplemental implementation of techniques and patient management.

Electric Power & Distribution

EPD 105 Climbing Skills (Sp) 4 SCH

Prerequisite(s): CDL Required. Introduction to proper methods of climbing wood pole structures. The student must master climbing wood pole structures with and without the use of a pole safety strap. Upon successful completion of this course, the student will be qualified in two methods of pole top rescue.

EPD 110 Pole Framing & Construction Specifications (Sp) 4 SC

Prerequisite(s): CDL Required. Introduction to Rural Electric Association line construction specifications and knowledge of pole framing on the ground and aerial framing. The student will gain a working knowledge of 7200 volt, 14,400 volt and 34,500 volt primary distribution systems. The student will also be introduced to copper and aluminum primary conductors and line staking.

EPD 120 Equipment Operation (Sp) 3 SCH

Prerequisite(s): CDL Required. Mastery of safe operation of various digger/derrick trucks, bucket/basket aerial platforms and trenchers commonly used in overhead and underground electric distribution work. The student will safely operate and perform routine maintenance and inspection on all units.

EPD 125 Setting & Replacing Poles (Sp) 1 SCH

Prerequisite(s): CDL Required. Theory in pole setting and change-out techniques. Emphasis is placed on setting and replacing poles in energized lines with digger/derrick trucks. The student will also gain a working knowledge of the proper use of cover-up material, both hard shell and rubber goods; vehicle grounding practices; manual pole setting; temporary pole supports; and worksite hazard analysis.

EPD 130 Transformer Theory (Sp) 4 SCH

Prerequisite(s): CDL Required. Introduction to basic electricity, related math, and transformer theory with hands-on experience in the installation and connection of single transformers and various three-phase transformer banks. Topics include transformer over voltage and over current protection; equipment grounding; cutout and lightning arrestor use and installation; current and potential transformer applications; use of VOM; and principles of troubleshooting.

EPD 135 Transformer Installation (Sp) 4 SCH

Prerequisite(s): Must have passed EPD199. Experience in installation and connection of single transformers and various three-phase transformer banks. Other topics addressed are transformer over voltage current protection, equipment grounding, cutout and lightning arrestor installation, current transformer applications, use of the Voltage Ohm Meter (VOM), and basic troubleshooting techniques are also practiced.

EPD 140 Service Installation & Metering (Sp) 4 SCH

Prerequisite(s): Must have passed EPD199. Working knowledge of single- and three-phase watt hour meter applications with practical experience in the installation and sizing of service conductors, construction and installation of meter loops and poles, instrument metering, and temporary service installations. Tampering and power theft, grounding and safe work practices are also covered.

EPD 145 Conductor Installation & Repair (Fa) 4 SCH

Prerequisite(s): Must have passed EPD199. This course focuses on the repair of various types of aluminum and copper conductors. Students will gain practical experience in the dead ending and splicing of conductors and installation of conductor shoes and clamps, and in the use of preformed line ties and service grips, bolt-on and compression connectors and sleeves, compression tools, strap hoists, pulling grips, sag charts and tables, mechanical jumpers, and grounding practices.

EPD 150 Rubber Gloving and Hot Sticking Methods (Fa) 3 SCH

Prerequisite(s): Must have passed EPD199. This course introduces students to methods of working on energized distribution lines and equipment with rubber gloves, sleeves, and hot sticks from off the pole and insulated aerial platforms. Students will gain a working knowledge of the application, care and use of hard shell covers, rubber line hoses and blankets, personal protective equipment, hot-line tools, and live-line maintenance. The course also reviews operation of bucket/basket aerial platforms and pole top and bucket rescue techniques.

EPD 160 Underground Distribution (Fa) 3 SCH

Prerequisite(s): Must have passed EPD199. Working knowledge of Underground Residential Distribution (URD) with practical experience in the direct burial of primary and secondary cables; installation of 200 and 600 amp elbows, splices, lightning arrestors, and overhead terminations; installation of single-phase and three-phase padmount and transclosure transformer installations; methods of shoring and sloping trenches and excavations; troubleshooting of primary and secondary cables; and fault location. The student will also review the operation of trencher digging equipment and safe work practices and procedures, proper grounding techniques of padmount transformers and transclosures.

EPD 170 Fusing & System Coordination (Fa) 1 SCH

Prerequisite(s): Must have passed EPD199. A study of various methods of system coordination, knowledge of oil circuit reclosures, sectionalizing, and the application of fuses where students will learn to install and operate single-phase and three-phase pole mount reclosures, substation fuses and reclosures, and gang operated air-break and load-break switches. The course also provides review of proper grounding techniques on various OCR's, sectionalizers and gang-mounted switches.

EPD 180 Substations & Voltage Regulation (Fa) 4 SCH

Prerequisite(s): Must have passed EPD199. A study of substations, capacitors, voltage regulators, auto-boosters; practical experience in substation grounding, inspections, substation maintenance; operation and installation of high side fuses, power transformers, substation buswork, and transfer switches; methods of voltage regulation, and Supervisory Control and Data Acquisition (SCADA).

EPD 195 Employability Skills (Fa) 1 SCH

Prerequisite(s): None. Course provides students with experience in preparing resumes, contacting future employers, and interviewing with prospective employers. Students will also gain experience in the interview process through mock interview sessions provided to help prepare the student for actual interviews.

EPD 199 Utility Internship (Su) 8 SCH

Prerequisite(s): Must have a grade of C or higher in EPD105, 110, 120, 125, and 130, and permission of instructor. Course provides practical work experience as an apprentice lineman with an operating utility and is completed between the first and second semesters. The student must spend at least eight clock hours in the computer learning center to develop his/her resume prior to interviewing for internship placement.

Facilities Maintenance Technology

FMT 100 Principles of Industrial Technology (Fa) 3 SCH

Prerequisite: None. This course is designed to introduce the student to the basic skills needed to perform maintenance in an industrial/technological setting. Areas to be covered include tools, measurement devices and measuring principles, bearings, belts and drives, fasteners, as well as blueprint and schematic reading and interpretation. Students will also be introduced to hydraulics and pneumatics and worker safety.

FMT 105 Print Reading (Fa) 3 SCH

Prerequisite: None. Students identify common symbols used to represent electrical, mechanical, structural, and plumbing components on print drawings. They describe the features of piping and instrumentation, electrical, logic and building layout drawings. This course includes practical exercises to reinforce print reading and interpretation.

FMT 110 Wiring and Electrical Troubleshooting (Sp) 3 SCH

Prerequisite: None. Students will identify the proper tools and develop high standard skills in maintenance, troubleshooting, installing, as well as repairs in residential wiring. Students will use Ohms Law principles to understand the theory of electricity and practice wiring different circuits common to residential wiring. Students will demonstrate proper method of installing parallel as well as series circuits using multiple switches and loads.

FMT 120 Carpentry and Structural Repair (Sp) 3 SCH

Prerequisite: None. Students will identify the proper tools, and develop high standards in maintenance, troubleshooting, installing, as well as repairs in residential carpentry. Students will use tools and techniques needed to work with a variety of materials used in residential and commercial structures.

FMT 122 Doors, Locks, and Hardware (Fa) 3 SCH

Prerequisite: Criminal Background Check. Students will perform basic locksmith work and perform a variety of maintenance work related to doors, locks, and associated hardware, including electrical and electronic control systems.

FMT 130 Plumbing and Pipe Fitting (Sp) 3 SCH

Prerequisite: None. This course introduces basic plumbing tools, materials, and fixtures to perform basic plumbing procedures. Topics include standard tools, materials, and fixtures used in basic plumbing systems and other related topics. Upon completion of the course, students should be able to demonstrate an understanding of a basic plumbing system.

FMT 132 Appliance Repair (Sp) 3 SCH

Prerequisites: FMT105, FMT110 with a grade of C or higher. The course provides an overview of basic residential appliance repair and appliance preventative maintenance procedures for the apartment maintenance technician. Includes identification of common appliances and their parts, sequence of operation, routine and preventative maintenance, adjustments and minor parts replacements associated with general make-ready tasks related to major home appliances. This course does NOT cover the maintenance and repair of HVAC type equipment. These skills are obtained through other Facilities Maintenance courses in this program.

FMT 140 Residential Building Codes (Sp) 3 SCH

Prerequisites: FMT105, FMT110, FMT120, FMT130 with a grade of C or higher. Students will learn to interpret and apply residential building codes for construction and maintenance of one- and two-family dwellings and townhouses up to three stories in height, including provisions for fire and life safety, structural design, energy conservations, and mechanical, fuel gas, plumbing, and electrical systems.

FMT 201 Material Movement Systems (Sp) 3 SCH

Prerequisite: None. Students will identify the basic types of conveyers used in industry. This includes the wiring, installation and design of conveyer systems as well as wiring, programming and setting controls such as variable drives used to drive the system. The use of computer logic contained in the conveyers themselves will also be covered. Print interpretation and basic mechanical drawing are introduced to facilitate completion of the final project.

FMT 205 Forklift and Skid Steer Operations (Fa) 2 SCH

Prerequisite: None. Forklift and Skid Steer operation training consists of a combination of lecture, practical demonstrations and equipment operation exercises. The courses teaches participants everything from forklift and Skid Steer engineering principles and operator safety rules, to maintenance and the importance of inspections.

FMT 215 Motors, Control Systems, & Logic Controllers (Sp) 6 SCH

Prerequisite: FMT110 with a grade of C or higher. Students will be introduced to a wide variety of AC and DC motors and the electrical, mechanical, and electronic controllers that enable their operation in both residential and industrial applications. Control systems will include Programmable logic controllers and various other technologies to control single speed, multi-speed, and variable speed motors.

FMT 240 Residential Journeyman Licensing Exam Prep (Sp) 1 SCH

Prerequisite: FMT140 with a grade of C or higher. Students will learn to prepare to take licensing examinations within a variety of areas to include plumbing electrical, HVAC/mechanical, and general contractor. The content of the course will vary depending on which examination preparation content is offered.

FMT 250 Boiler Operations (Sp) 3 SCH

Prerequisite: HVA140 with a grade of C or higher. Students learn the safe and efficient operation of both low- and high-pressure boilers and related equipment. Students will be preparing to pass a boiler operator's license exam. The course covers virtually all facets of steam boiler operation, maintenance, and troubleshooting.

General Education

BSC 110 Biology (Fa, Sp) 5 SCH

Prerequisite: None. This course will enable the student to apply basic biological principles to relevant situations in his/her daily life. The student will apply the scientific process to problem solving and deductive reasoning to analyze and interpret observations. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.

BSC 125 Anatomy and Physiology (Fa, Sp) 5 SCH

Prerequisite(s): Biology or High School Anatomy and Physiology within five years with a grade of C or higher, or with permission of the Director of Biosciences. This course will enable the student to develop an understanding of the principles in structure and function of the human body systems. An intermediate study designed primarily for pre-professional students in health-related fields. The student will participate in three hours of lecture and four hours of laboratory per week.

BSC 205 Microbiology (Fa, Sp) 5 SCH

Prerequisite: 5 credit hour Biology course within five years with a grade of C or higher, or with permission of the Director of Biosciences. This course will enable the student to identify disease causing microorganisms or agents and their role in the disease process, including principles of microbial cell structure, genetics, metabolism, immunity, and control. The student will also be able to demonstrate proficiency in standard laboratory techniques used in inoculation, isolation, incubation, inspection, and identification of bacteria. These techniques also include the examination of fungi, protists, and parasitic worms. In addition, the course will enable the student to demonstrate mechanisms in the prevention and treatment of infectious disease. Three hours of lecture/discussion and four hours of laboratory per week.

CHM 100 Physical Science (Fa) 4 SCH

Prerequisite: None. Physical Science is primarily a preparatory course for students who will take Chemistry I. This is an introductory course into the major areas of the physical sciences including concepts of physics such as forces, energy, electricity/magnetism, nuclear science, and chemistry.

CHM 110 Chemistry I (Fa, Sp) 5 SCH

Prerequisite(s): General Chemistry or Physical Science and Algebra within five years with a grade of C or higher, or with permission of the Director of Biosciences. This course will enable students to understand the scientific method, improve knowledge of basic math skills, work with scientific materials and apply scientific reasoning to real world problems. Application will be made by relating structure and behavior of matter to its function in health and life. The student will participate in 3 hours of lecture and 4 hours of laboratory per week. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

COM 100 Workplace Writing (Fa, Sp) 3 SCH

Prerequisite: None. Workplace writing emphasizes sentence and paragraph structure, organization, development, and grammatical correctness. It offers practice in writing letters, resumes, and academic and workplace documents.

COM 105 English Composition I (Fa, Sp) 3 SCH

Prerequisite(s): COMPASS score 70, corresponding ASSET/ACT/SAT scores, or complete COM 100 with a grade of C or higher. Introduction to expository writing emphasizing expression of ideas, structure, organization, development, and grammatical correctness. Offers practice in researching, revising, and editing. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

COM 106 English Composition II (Fa, Sp) 3 SCH

Prerequisite(s): COM 105 with a grade of C or higher. This course provides the students opportunities to practice organizing and writing research-based papers highlighting critical thinking. Library and research skills will be emphasized. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

COM 110 Technical Writing (Fa, Sp) 3 SCH

Prerequisite(s): COMPASS score of 70, corresponding ASSET/ACT/SAT scores, or complete COM100 with a grade of C or higher. This course is an introduction to professional and technical writing used in the workplace. The class offers practice in document design and editing. The types of correspondence include memos, letters, e-mail, reports, and instructional manuals. The course will focus on clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Collaboration and teamwork is stressed. Presentations will be practiced during class.

COM 115 Public Speaking (Fa, Sp) 3 SCH

Prerequisite: None. This course is an elementary course in the study and practice of the basic principles of speech and interpersonal communication with emphasis on critical thinking, the creative and intelligent selection of material, organization and oral presentation. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

MAT 099 Workplace Mathematics (Fa, Sp) 2 SCH

Prerequisite: None. This is a course that focus is on preparing students to succeed in college level mathematics. Topics include basic operations, fractions, decimals, percent, and measurement.

Supplemental instruction will include overcoming math anxiety for academics and solving mathematical applications for the workplace.

MAT 101 Technical Mathematics I (Fa, Sp) 3 SCH

Prerequisite(s): Appropriate COMPASS score or MAT099 with a grade of C or higher. This is an overview of mathematics course that focuses on technical applications. Topics include basic quantitative problem solving, algebra with technical applications, measurement, proportions, and geometry. This course is designed to provide students with the mathematical background necessary for entering technical career fields.

MAT 102 Technical Mathematics I with Review (Fa, Sp) 5 SCH

Prerequisite(s): COMPASS Pre-Algebra score 25-38, and must be enrolled in one of the following programs: Air Conditioning & Refrigeration, Automotive Collision Repair, Automotive Technology, Building Trades, Electric Power and Distribution, or Welding Technology. This is an overview of mathematics course that focuses on technical applications. The first part of the semester will be focused on preparing students to succeed in college level mathematics. Topics include basic operations, fractions, decimals, percent, and measurement. The second part of the semester will focus on basic quantitative problem solving, algebra with technical applications, measurement, proportions, and geometry. This course is designed to provide students with the mathematical background necessary for entering technical career fields.

MAT 108 Beginning Algebra (Fa, Sp) 3 SCH

Prerequisite: Appropriate COMPASS score or MAT099 with a grade of C or higher. This is an introductory algebra course that includes applications. Topics include a review of pre-algebra, variable expressions, solving algebraic equations, linear equations in two variables, inequalities and polynomials. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

MAT 109 Technical Mathematics II (Fa, Sp) 3 SCH

Prerequisite(s): MAT101 with a grade of C or higher, or appropriate COMPASS score. This is an algebra based mathematics course that focuses on technical applications. Topics include graphing linear equations, systems of linear equations, polynomials, factoring polynomials, quadratic equations, right triangle trigonometry and trigonometry with any angle. This course is designed to provide students with the critical thinking needed for solving complex technical problems and the mathematical background necessary to be successful in College Algebra.

MAT 110 Intermediate Algebra (Fa, Sp) 3 SCH

Prerequisite(s): MAT108 with a grade of C or higher, or appropriate COMPASS score. This course is designed for students who have only one year of high school algebra and a preparatory course for College Algebra. Topics covered will include Number Systems, Linear Equations and Inequalities, Lines, Systems of Linear Equations and Inequalities, Polynomials, Exponents, Rational Expressions and Quadratic Equations. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

MAT 135 College Algebra (Fa, Sp) 3 SCH

Prerequisite(s): MAT 110 with a grade of C or higher, or appropriate COMPASS score. College Algebra is a comprehensive overview of the fundamental concepts of algebra. Topics include quadratic equations, polynomial functions, rational functions, radical functions, logarithms, systems of equations and inequalities, matrices and determinants, and additional topics as time permits. This course will also focus on the analysis of graphs. Students will be required to have a graphing calculator. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

MAT 145 Elementary Statistics (Fa, Sp) 3 SCH

Prerequisite(s): MAT 135 with a grade of C or higher. Elementary Statistics is an introductory study of the fundamentals of modern statistics and probability. The main topics covered include descriptive methods, inductive statistics, probability, estimation and tests of hypotheses, along with other topics as time allows. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

NTR 105 Nutrition (Fa, Sp) 3 SCH

Prerequisite: None. This course offers information about the various nutrients essential to promoting growth and maintenance of the human body. Specific nutrient content identifies food sources, usages in the body as well as effects of deficiencies.

PSY 100 General Psychology (Fa, Sp) 3 SCH

Prerequisite: None. This course is an introduction to the science of psychology with an emphasis on the principles which lead to a greater understanding of human behavior. A variety of laboratory experiences will be included in the course. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

PSY 125 Human Growth and Development (Fa, Sp) 3 SCH

Prerequisite(s): PSY100 recommended. This course offers information concerning normal physical, psychological, and social development changes that occur in a person from birth to death. Specific information identifying factors which influence human development and changes in family structure and living during the life cycle are covered.

SOC 100 Introduction to Sociology (Fa, Sp) 3 SCH

Prerequisites: None. This course is an introduction to the study of the structure and function of human groupings, particularly those which occur in contemporary industrialized cultures. The relationships between the individual and his/ her society, culture and society, and the social dynamics of institutions are investigated. The learning outcomes and competencies meet or exceed the outcomes and competencies specified by the Kansas Core Outcomes project for this course, as sanctioned by the Kansas Board of Regents.

SOC 200 Marriage and Family (Fa, Sp) 3 SCH

Prerequisite: None. This course will explore the nature, development, functions, and norms of families in our society. Consideration will be given to pre-marital, marital, and parent-child relationships, with particular attention given to courtship, marriage, sexual relations, birth control, gender roles, kinship, social class, race and child rearing. The impact of divorce, death, and violence on family relationships will also be discussed. Emphasis will be placed on the dynamic nature of family life and family relationships.

Information & Network Technology**CRT 100 Principles of Information Assurance (Fa, Sp) 1 SCH**

Prerequisite: None. Principles of Information Assurance is designed to teach the principles and practices that all computer users need to keep themselves safe, both at work and at home. By presenting best practices along with a small amount of theory, students are taught both what to do and why to do it. Topics covered include how to secure both clean and corrupted systems, protecting your personal data, securing simple computer networks, and safe Internet usage.

CRT 110 Employability Skills (Fa, Sp) 1 SCH

Prerequisite: None. Discussion and scenarios are used to prepare for the world of work. Resume writing, customer relations and general job seeking and retention skills are covered.

CRT 115 INT (Information & Network Technology) Essentials (Fa, Sp) 1 SCH

Prerequisite: None. This course will provide students with the necessary foundation of basic knowledge (in number systems, electronics, and computing) to enhance their ability to successfully progress through and complete the INT program.

CRT 118 Windows Administration Using the Command Shell (Fa, Sp) 1 SCH

Prerequisite: None. This course will enable the student to understand the need for Windows administrators to know and understand PowerShell for managing Windows systems. This includes using PowerShell Cmdlets and PowerShell scripts.

CRT 120 Advanced Operating Systems (Fa, Sp) 3 SCH

Prerequisite: None. This course covers personal computer operating systems in general. Topics include Overviews of Windows, DOS, Linux, and Mac OS, installation, configuration, and management. Microsoft Windows is the primary operating system (OS) used in this course to teach OS concepts but instruction is focused on properties and aspects of all computer operating systems. This course is one of two Information and Network Technology courses that enforce A+ certification skills. (CRT125).

CRT 125 PC Hardware (Fa, Sp) 3 SCH

Prerequisite: None. This course covers personal computer hardware including; hard drive sub-systems, interfaces, memory, motherboards and peripherals. Students will also be introduced to device drivers, electrostatic discharge, safety and proper device installation. This course is one of two Information and Network Technology courses that enforce A+ certification skills. (CRT120).

CRT 144 UNIX Fundamentals (Sp) 3 SCH

Prerequisite: CRT118 with a grade of C or higher. The course is intended for new users of UNIX and teaches students how to use UNIX operating system commands. Students will learn fundamental command-line features of the UNIX environment including file system navigation, file permissions, the text editor, command shells and basic network use. This course utilizes the Linux operating system to teach basic UNIX commands, concepts and structure.

CRT 148 Microsoft Windows Network Operating Systems (Fa) 3 SCH

Prerequisite: CRT120 with a grade of C or higher. This course is intended as an introduction to the current version of Microsoft's Windows network operating system. Material presented extends from creating a site plan, through installation, configuration, administrative management and finishes with disaster recovery. Installation and management of virtual servers and secure networking are integrated within coursework. Students utilize hands-on activities to reinforce presented concepts.

CRT 151 Infrastructure Virtualization (Sp) 3 SCH

Prerequisite: CRT118 with a grade of C or higher. This hands-on training course explores installation, configuration, and management of virtual servers and desktops. Course content also consists of monitoring, scaling, and protecting virtual computer networks. The course primarily uses VMWare vSphere, vCenter, and ESX/ESXi technologies to present the material. Students who complete the course are prepared to sit for the VMWare Certified Professional (VCP) Exam for which this class meets the prerequisite.

CRT 170 Networking Fundamentals (Fa, Sp) 3 SCH

Prerequisite: None. This course introduces students to the essential concepts and skills that constitute the basic foundation of all networks. TCP/IP and Ethernet are the primary technologies used in the course to present network fundamentals. Course content also consists of WAN/LAN technologies, Network Addressing, IP Subnetting, the OSI model, encapsulation and path determination. This course is the first of four Cisco Networking Academy CCNA courses (Semester 1).

CRT 175 Routing Protocols and Concepts (Fa, Sp) 3 SCH

Prerequisite: CRT170 with a grade of C or higher. This course includes WANs, routers, router command line interface, router components, router startup and setup, router configuration, TCP/IP, IP addressing, VLSM, routing, routing protocols, and network troubleshooting. Routing Protocols and Concepts is the second course in the CISCO Academy Program (Semester 2).

CRT 181 Network & Server Management (Fa) 3 SCH

Prerequisite(s): CRT120 and CRT170, each with a grade of C or higher. This course provides the fundamental knowledge to implement and administer network management services in homes, small offices and other enterprise environments. Students learn effective techniques needed to install, manage, monitor, configure and troubleshoot networks. Other topics include: centralized event logging, time synchronization, remote desktop, remote installation, remote management, project management, disaster recovery, computer network policies, fault tolerance, packet analyzers, SNMP, central authentication, enterprise virus protection, encryption, centralized update and service packs, asset management, total cost of ownership, network performance monitoring, fault monitoring, change management, auditing and documentation.

CRT 215 Database Systems (Fa, Sp) 3 SCH

Prerequisite: CRT148 with a grade of C or higher. This course introduces students to the concepts necessary for designing, using and implementing database systems and applications. An overview of database management systems architecture, entity-relationship model, relational data model, structural query language (SQL), normalization, indexing, data integrity, referential integrity, constraints and security. Also included are basic file organization and storage management; e-commerce web application development; database systems and the Internet. The student will be able to manage and maintain databases, user accounts, database availability, recovery, and reporting. This course focuses on commercial relational databases and their uses in the computerized business world.

CRT 282 Network Security (Fa, Sp) 3 SCH

Prerequisite(s): CRT286 with a grade of C or higher. This course provides a comprehensive overview of the primary strategies and technologies used to defend a network including the knowledge and skills to design and implement essential technical solutions that provide the foundation level of security for all modern networks. Students will also learn the principles and practices of effective network policy and management practices.

CRT 286 LAN/WAN Implementation and Support (Fa, Sp) 3 SCH

Prerequisite: CRT175 with a grade of C or higher. The focus of this course is on LAN switching, wireless LANs and accessing wide area networks (WAN). The goal is to develop an understanding of how a switch communicates with other switches and routers in a small- or medium-sized business network to implement VLAN segmentation and to develop an understanding of various WAN technologies to connect small- to medium sized business networks. This course also teaches how to integrate wireless devices into a LAN.

CRT 289 Information Systems Security (Fa, Sp) 3 SCH

Prerequisite(s): CRT286, CRT181, CRT144, and CRT148, all with a grade of C or higher. This course focuses on the large scale implementation of information systems security with emphasis on current threats and vulnerabilities. Students will identify key elements that enable these cyber security threats and apply security controls that can mitigate the risk associated with these threats. Students will protect systems and networks from threats. This course will explore methods, tools, and techniques that intruders use to exploit vulnerabilities in systems. The student will apply the elements of information assurance and computer security from risk assessment to public key encryption. Additionally awareness training, countermeasures and safeguards and continuity of operations are taught.

CRT 295 INT Capstone (Fa, Sp) 3 SCH

Prerequisite(s): CRT286, CRT181, CRT144, and CRT148, all with a grade of C or higher. This capstone course will be a team focused, integrated learning opportunity that will move the student experience from a lab environment to a real world internet live experience. The students, as part of a team, will design, install and maintain an enterprise network. The student will also experience industry culture, standards and practices. The capstone project incorporates skills from all the required courses but involve the actual application of those skills. Project management techniques with an emphasis on the design and management of computer information systems and controlling project risks, budgets, and quality assurance will be included. The project will require student teams to analyze potential design alternatives, interpret results, document best practices, and report their findings. There will be opportunities to explore emerging and converging Information technologies and their implications. A final oral and visual presentation of this project will reflect a degree of skill competency as a communicator.

Medical Laboratory Technology

* Denotes course delivered online

** Denotes face-to-face in a student laboratory

***MLT 120 Introduction to the Laboratory Lecture for MLT 2 SCH**

Prerequisite: None; *Co-Requisite:* MLT221. This course covers organization of the medical laboratory, educational requirements of laboratory scientists, and their duties, awareness of the professional and accrediting agencies associated with the field of laboratory medicine. The course also presents the principles behind the practice of laboratory safety, operation of laboratory equipment, specimen collection through venipuncture and capillary puncture. Quality control/quality assurance, laboratory mathematics, instrumentation, and microscopy are also addressed.

****MLT 121 Introduction to the Lab for MLT 1 SCH**

Prerequisite: None; *Co-requisite:* MLT120. Laboratory skills involving measurement and instrumentation are introduced and practiced in this Lab course. Topics to be covered include safety, medical terminology, laboratory mathematics, specimen collection, microscope use, staining procedures, professional behavior, ethics, use of general lab equipment, and introductory procedures in serology, urinalysis, chemistry, hematology, blood banking, and microbiology.

***MLT 220 Hematology/Coagulation Lecture for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; *Co-requisite:* MLT221. This course presents the theory behind hematologic principles including the formation of blood cells, identification of normal and abnormal blood cells as they correlate to disease. Also included is the study of coagulation, the clotting and fibrinolytic mechanisms of the blood.

****MLT 221 Hematology/Coagulation Lab for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite: MLT 220. This course presents laboratory tests which are the application of the theory behind hematologic principles including the formation of blood cells, identification of normal and abnormal blood cells as they correlate to disease. Also included is the study of coagulation, the clotting and fibrinolytic mechanisms of the blood.

***MLT 230 Urinalysis & Body Fluids Lecture for MLT 2 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite: MLT 231. This course presents principles of urine formation, normal and abnormal properties, chemical analysis and microscopic study of urine along with physical, chemical and microscopic examination of other body fluids.

****MLT 231 Urinalysis & Body Fluids Lab for MLT 1 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program and completion of MLT220/221 with a grade of C or higher; Co-requisite: MLT230. This course presents principles of study an assessment of urine formation, normal and abnormal properties, chemical analysis and microscopic study of urine along with physical, chemical and microscopic examination of other body fluids.

***MLT 240 Clinical Chemistry Lecture for MLT 3 SCH**

Prerequisite(s): A cumulative GPA 2.00 and admission into the MLT program; Co-requisite: MLT 241. This course presents basic chemical principals and procedures as they apply to the clinical laboratory are presented. Includes fundamental concepts in the quantitative analysis of chemical components of blood, serum, plasma, and other body fluids. Laboratory math, including normality, molarity, percent concentration, and dilutions will be reviewed.

****MLT 241 Clinical Chemistry Lab for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite: MLT 240. This course focuses on laboratory practice and observation of basic chemical procedures as they apply to the clinical laboratory are presented. Includes review of fundamental concepts in the quantitative analysis of chemical components of blood, serum, plasma, and other body fluids. Laboratory math, including normality, molarity, percent concentration, and dilutions will also be reviewed.

***MLT 250 Immunology Lecture for MLT 2 SCH**

Prerequisite(s): A cumulative SPA of 2.00 and admission into the MLT program; Co-requisite: MLT 251. This course is the combination of essential immunologic theory with discussion of the serologic techniques commonly used in the clinical laboratory.

****MLT 251 Immunology Lab for MLT 1 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite(s): MLT 250. This course is a combination of essential theory with serologic techniques commonly used in the clinical laboratory.

***MLT 270 Pathogenic Microbiology Lecture for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite: MLT 271. This course will survey microbiology as it is applicable to a clinical laboratory. Procedures for routine specimen collection will be discussed and practiced. Normal flora and possible pathogenic bacteria will be identified by morphology, staining characteristics, colonial morphology, growth on selective media, biochemical testing and serological methods. Basic theory on antimicrobial susceptibility testing will be covered. Principles of all tests will be studied. Study of viruses and Chlamydia will be limited to the processing and handling of specimens for consultant referral and principles of serological testing. Normal and pathogenic parasites and fungal elements will be identified and procedures utilized for proper identification will be discussed.

****MLT 271 Pathogenic Microbiology Lab for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program; Co-requisite: MLT 270. This course will survey microbiology procedures for the routine specimen collection in the clinical setting. Normal flora and possible pathogenic bacteria will be identified by morphology, staining characteristics, colonial morphology, growth on selective media, biochemical testing and serological methods. Basic theory on antimicrobial susceptibility testing will be covered. Principles of all tests will be studied. Study of viruses and Chlamydia will be limited. Normal and pathogenic parasites and fungal elements will be identified and procedures utilized for proper identification will be discussed.

***MLT 280 Blood Bank Lecture for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00 and admission into the MLT program and completion of MLT 250/251 with a grade of C or higher; Co-requisite: MLT 281. Theory of the basic concepts of blood groups, antibody detection and identification, transfusion practice, and collection of donated blood units are presented in this course.

****MLT 281 Blood Bank Lab for MLT 3 SCH**

Prerequisite(s): A cumulative GPA of 2.00, admission to the MLT program; Co-requisite: MLT 280. This course will focus on the clinical application of the basic principles of blood groups, antibody detection and identification, transfusion practice, and collection of donated blood units.

MLT 298 Clinical Internship I for MLT 5 SCH

Prerequisite(s): Successful completion of all technical courses. This course will offer students one-on-one work experience with clinical instructors to refine clinical laboratory skills within a designated clinical affiliate laboratory. This clinical internship will include 240 hours of clinical experience. This course will integrate knowledge gained in all MLT courses with practical experience in hematology, coagulation, chemistry, immunology, immunohematology, microbiology, urinalysis, and serology.

MLT 299 Clinical Internship II for MLT 5 SCH

Prerequisite(s): Successful completion of all technical courses. This course will offer students one-on-one work experience with clinical instructors to refine clinical laboratory skills within a designated clinical affiliate laboratory. This clinical internship will include 240 hours of clinical experience. This course will integrate knowledge gained in all MLT courses with practical experience in hematology, coagulation, chemistry, immunology, immunohematology, microbiology, urinalysis, and serology.

Nursing

NUR 102 Medication Math 1 SCH

Prerequisite: Admission to the PN program. This course directs the student toward gaining proficiency in medication math calculations. Information is offered about the formulas and computations used in calculation of medication dosages and monitoring of intravenous fluid therapy. Specific principles used in converting measurements from metric, apothecaries, and household equivalencies appropriate to nursing care will be covered.

NUR 107 KSPN Foundations of Nursing 4 SCH

Prerequisite(s): Admission to the PN program, and concurrent enrollment in NUR108. This course utilizes the nursing standards of practice based on principles of biology, psychosocial, spiritual and cultural to meet the needs of clients throughout the lifespan. Emphasis is placed on basic nursing skills, patient safety and therapeutic communication. Concepts and skills are enhanced in subsequent courses.

NUR 108 KSPN Foundations of Nursing Clinical 2 SCH

Prerequisite(s): Admission to the PN program, and concurrent enrollment in NUR107. This course explores the art and science of nursing. Emphasis is placed on the nursing process, cultural and spiritual awareness, communication, data collection, performance of basic nursing skills, and documentation. Principles of safe medication administration are introduced.

NUR 111 KSPN Pharmacology 3 SCH

Prerequisite: Admission to the PN program. This course introduces the principles of pharmacology, drug classifications, and the effects of selected medications of the human body. The nursing process is used as the framework for ensuring safe and effective nursing care for clients across the lifespan.

NUR 117 KSPN Medical-Surgical Nursing I 4 SCH

Prerequisite(s): NUR107 and NUR108, and concurrent enrollment in NUR118. This course focuses on the effect of disorders of selected systems throughout the lifespan and applies the nursing process in meeting basic needs. Health promotion and maintenance, rehabilitation and continuity of care are emphasized. The role of the practical nurse is incorporated throughout.

NUR 118 KSPN Medical-Surgical Nursing I Clinical 3 SCH

Prerequisite(s): NUR107 and NUR108, and concurrent enrollment in NUR117. This course includes simulated and actual care situations of selected systems throughout the lifespan, utilizing acute and long-term care setting. An emphasis is placed on critical thinking and clinical decision-making skills.

NUR 133 Personal and Career Orientation 1 SCH

Prerequisite(s): NUR117 and NUR118. This seminar-style course provides orientation to the LPN role and responsibilities. Seminar sessions will be held during the spring semester.

NUR 134 KSPN Mental Health Nursing 2 SCH

Prerequisite(s): NUR117 and NUR118. This course explores basic concepts and trends in mental health nursing. Therapeutic modalities and client behavior management are discussed. Emphasis is placed on using the nursing process and meeting the basic human needs of the mental health client.

NUR 136 KSPN Gerontology 2 SCH

Prerequisite(s): NUR102, NUR107, NUR108, NUR110, NUR117, and NUR118, all with a grade of C or higher. This course is designed to explore issues related to the aging adult using the nursing process as the organizing framework. Also discussed are the impact of ageism, alterations in physiological and psychosocial functioning, and the role of the practical nurse in caring for older adult clients.

NUR 137 KSPN Medical-Surgical Nursing II 4 SCH

Prerequisite(s): NUR117 and NUR118, NUR111 and concurrent enrollment in NUR138. This course focuses on the effect of disorders of selected systems throughout the lifespan using the nursing process in meeting basic needs. Prevention, rehabilitation and continuity of care are emphasized. The role of the practical nurse is incorporated throughout.

NUR 138 KSPN Medical-Surgical Nursing II Clinical 3 SCH

Prerequisite(s): NUR117 and NUR118, and concurrent enrollment in NUR137. This experience uses simulated and actual care situations of selected systems throughout the lifespan, utilizing acute and long-term care settings. An emphasis is placed on critical thinking and clinical decision-making skill development. Principles of leadership for the practical nurse will be implemented, as well as multi-task management skills for transition as a practical nurse.

NUR 170 KSPN Maternal Child Nursing 2 SCH

Prerequisite(s): NUR137, NUR138, and concurrent enrollment in NUR171. This course focuses on the pre- and post-natal maternal nursing care, as well as, the care of children from infancy to adolescence. Emphasis is given to normal reproduction and frequently occurring biological, cultural, spiritual and psychosocial needs of the child-bearing and child-rearing family.

NUR 171 KSPN Maternal Child Nursing Clinical 1 SCH

Prerequisite(s): NUR137, NUR138, and concurrent enrollment in NUR170. This clinical course applies concepts from Maternal Child I. Emphasis is placed on the nursing process and meeting the basic needs of the maternal child client.

NUR 201 RN Transition Course 2 SCH

Prerequisites: Admission to the ADN program. 2 credit hours (1.5 didactic, .5 lab) Focus is on the role transition from LPN to RN. It includes the review and/or validation of major content/concepts and skills from the Kansas PN Core Curriculum. Emphasis is placed on the transition of the LPN to the RN role, physical assessment skills, communication and critical thinking skills. The student's responsibility for learning, self-evaluation and collaboration is also emphasized.

NUR 220 Nursing Across the Lifespan 10 SCH

Prerequisite: NUR201. 10 credit hours (7 didactic, 3 clinical). This course focuses on IV therapy, health promotion, illness prevention and maintenance of health in acute or chronic conditions for individuals experiencing psychological/ psychiatric and medical or surgical problems across the life span. Clinical experiences may be gained on the Obstetric, Pediatric, Psychiatric and Medical-Surgical Units. Nursing role emphasis is on organizing care for individuals using the nursing process. Critical thinking differentiates client needs based on age, health status, and acuity of condition, ethnic origins, and prognosis. The client's role within the family, his/her occupation, and society are taken into account. Principles and practices of IV therapy are emphasized.

NUR 230 Management of Patient Care 12 SCH

Prerequisite: NUR220. Focus is on the management of patient care for larger groups. Critical thinking is emphasized in the organization, coordination, and delegation of client care. Experience is provided in the care of patients with more acute or complex conditions in areas such as critical care, emergency room, and rehabilitation settings. Ethical and legal uses are explored as they related to nursing practice. Transition to the professional nursing role is revisited.

Surgical Technology

STL 1016 Principles & Practice of Surgical Technology Lab 3 SCH

Prerequisite(s): Admission to the ST program and concurrent enrollment in SCCC's ST1015. This lab course is designed to provide the student with in-depth knowledge concerning the scope and practice of Surgical Technology. Students will be exposed to concepts of hospital structure and management and the physical environment of a surgical suite. Students will learn patient safety procedural issues such as identification, consent, chart review, and needs of the patient. Students will also study skills related to teamwork, professional credentialing and organizations, and legal and ethical issues.

STL 1110 Surgical Procedures I Lab 5 SCH

Prerequisite(s): Admission to the ST program and concurrent enrollment in SCCC's ST1110. This is a five credit hour clinical course designed to allow the student to begin to apply skills learned in the first semester to real life procedures. With the web-based learning platform and clinical practice the student will learn to select instrumentation and other supplies for specific procedures. The student will apply learning in anatomy and pathophysiology, and techniques from first semester in the practical experience of passing instruments to the surgeon in the clinical setting. The student will apply the basic skills of aseptic technique both in the laboratory setting and the clinical practicum as well as the basic terms and usages of medical terminology.

STL 1708 MATC Surgical Procedures II Clinical 6 SCH

Prerequisite(s): Admission to the ST program and concurrent enrollment in SCCC's ST1707. This is a four credit hour clinical course designed to allow the student to learn to select instrumentation and other supplies for surgical procedures. The student will learn more difficult procedures and continue the learning process from Surgical Procedures I. In the surgical suite of the clinical areas the student will be able to demonstrate the more advanced skills of the Surgical Technologist. The student will also be encouraged to further develop his/her sterile consciousness in order to work more confidently within the operating room. Job interviews with resumes will also be covered.

Welding Technology**WLD 100 Welding Safety/OSHA 10 (Fa) 2 SCH**

Prerequisite: None. An introduction to theories of welding Shielded Metal Arc, Gas Metal Arc, and Gas Tungsten Arc.

WLD 110 Welding Metallurgy (Fa) 1 SCH

Prerequisite: None. A study of the effects of heat on the structure of metal and with what happens to metal when certain alloying elements are added to it.

WLD 115 Blueprint Reading (Fa) 2 SCH

Prerequisite: None. The intent of this course is to provide instruction in proper reading and interpretation of welding symbols and fabrication layout designs.

WLD 120 Oxy-Acetylene Welding (Fa) 2 SCH

Prerequisite: None. Practice properly set-up and operate oxy-fuel torch outfit safely, to make several weld samples on mild steel metal in all positions, and to properly operate all oxy-fuel, plasma, and carbon arc gouging to make proper cuts and bevels on a variety of materials and thicknesses.

WLD 130 Cutting Processes (Fa) 2 SCH

Prerequisite: None. Includes cutting of ferrous metals with manual, motor driven, and oxy-fuel shape cutting equipment. Also included is high-energy plasma-arc and carbon arc cutting.

WLD 140 Shielded Metal ARC Welding 1 (Fa) 3 SCH

Prerequisite: None, or permission of instructor. Practice in proper set-up of ARC welding equipment to weld in all positions on mild steel plate.

WLD 145 Shielded Metal ARC Welding 2 (Fa) 4 SCH

Prerequisite(s): Complete WLD140 Shielded Arc Welding I with a grade of C or higher, or Instructor Permission. Shielded metal arc welding safety, theory, and manipulative skills in the vertical and overhead positions.

WLD 150 Gas Metal ARC Welding 1 (Sp) 3 SCH

Prerequisite: None, or permission of instructor. Instruction in proper set-up and operation of MIG welding equipment to weld in all positions using sheet metal and steel plate, as well as several different sizes, wires and types of gasses.

WLD 155 Gas Metal ARC Welding 2 (Sp) 4 SCH

Prerequisite: WLD150. Instruction in proper set-up and operation of MIG welding equipment to weld in all positions using aluminum, as well as several different sizes, wires and types of gasses.

WLD 160 Flux Colored ARC Welding (Sp) 2 SCH

Prerequisite(s): None or permission of instructor. A study of the use of self-shielded flux cored and gas-shielded flux cored tubular wire electrodes.

WLD 171 Gas Tungsten ARC Welding (Sp) 3 SCH

Prerequisite(s): None or permission of instructor. Practice in proper set-up and operation of TIG welding equipment to weld in all positions by using mild steel and stainless steel.

WLD 176 Gas Tungsten ARC Welding 2 (Sp) 2 SCH

Prerequisite(s): Complete WLD171 with a grade of C or higher, or Instructor Permission. Practice in proper set-up and operation of TIG welding equipment to weld in all positions using aluminum.

WLD 190 Project Management (Sp) 2 SCH

Prerequisite(s): 20 credits in WLD & permission of instructor. Capstone course utilizing welding and cutting skills combined with layout, design and working procedures, such as power brakes, rolls, blueprint reading, math and special formula skills in project format.

WLD 195 Employability Skills (Sp) 1 SCH

Prerequisite: Instructor Permission. Develop skills in computer usage, speed reading, resume writing, human relations, personal and professional development.

WLD 199 Occupational Work Experience (Sp) 2 SCH

Prerequisite: Instructor Permission. Planned work experience in the workforce which is supervised by a welding professional and monitored by an instructor.

WLD 260 Agricultural Construction (Sp) 3 SCH

Prerequisite: None. This course is designed to provide students with the theoretical basis, knowledge and skills necessary for the construction/fabrication of metal projects. Emphasis will be placed on: laboratory safety, general laboratory measurements, metal identification/ characteristics, oxyacetylene welding and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), plasma cutting, and project construction.

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