

2016-2017 Course Catalog



MANHATTAN AREA TECHNICAL COLLEGE

Dear Student/Friend of MATC,

Welcome to Manhattan Area Technical College (MATC). On behalf of the faculty and staff, board members and alumni, we are pleased that you have considered our college to help you prepare for the future. Manhattan Area Technical College has a proud record of providing career and technical education opportunities for the citizens of Kansas and people of the world. Whether you are entering as a first-time freshman, a transfer student with some college experience or a degree, or are returning to college from the workplace to enhance your skills and education, you are welcome here! MATC is a student-centered institution dedicated to academic endeavors that meet the high standards demanded by employers within our service area and beyond.



MATC has many ways to help you, so please let any employee know if you need assistance. We know that learning from your classes and program of study is often enough to challenge you, but we also know that the challenges of life often present themselves while you work on becoming a nurse, technician, tec. We can help you develop options to keep you focused on your educational goals and your timeline for success.

You will find that the sense of family at MATC moves beyond the classroom and into the community. Our students are regularly involved in activities, both on and off campus, which benefit Manhattan and the surrounding areas. Students are encouraged to take advantage of leadership opportunities in order to better prepare themselves for similar roles that await them in the future.

Come by and visit, give us the chance to sell you on Manhattan Area Technical College!

A handwritten signature in black ink, appearing to read "James Genandt".

James Genandt
President and CEO

Founded 1965

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DIRECTORY

Board of Directors

785.320.4563

Therese Adams, Board Chair, Riley County
Randall Anderes, Board Vice Chair, Riley County
L. J. Baker, Geary County
Marla Brandon, Pottawatomie County
David Fritchen, Riley
Wendy Luttmann, Clay County
Dr. Irma O'Dell, Geary County
John Pagen, Riley County
Megan Umscheid, Pottawatomie County
Tracy Geisler, Board Clerk

College Staff

785.587.2800

Administration

President
Vice President of Academic Affairs
Vice President of Administrative Services
Vice President of Student Services
Chief Financial Officer
Chief Information Officer

James Genandt
Marilyn Mahan
Keith Zachariasen
Sarah Phillips
Carmela Jacobs
Josh Gfeller

Office of the President

Executive Assistant / Resource Development Coordinator

Tracy Geisler

Institutional Advancement

Associate Vice President of Institutional Advancement

Richard Fogg, Ph.D.

Student Services

Director of Academic Advising
Director of Admissions
Director of Financial Aid
Registrar
Assistant Director of Financial Aid
Academic Advisor
Admissions Coordinator
Student Services Clerk

Lana Lind
Neil Ross
Laura Weiss-Cook
Rachel Sherley
Shania Dekat
Dan Kirkpatrick
Monica McFadden
Alissa Riegler

Academic Affairs Support

Director of Continuing Education and Corporate Training
Coordinator of Academic Success Center
Coordinator of Allied Health and Continuing Education
Coordinator of Library Services
Instructional Outreach Specialist
Instructional Project Coordinator
Instructional Technology Specialist

Dawn Krause
Darren Ortega
Dorothy Soldan
Donna Hobbs
Lauren Rust
Sarah Hamilton
TBA

Business Office

Accounting Specialist – Payables and Purchasing
Student Accounts Coordinator

Diane Fowler
Susan Harvey

Information Technology

Database Report Writer and Programmer
Network Administrator
Desktop Technician

Andrea Wilson
Bryanna Marihugh
Nicholas Warren

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.

2016 Fall Semester

July 11	A.D.N. Fall Semester classes begin for Fall 2016 class
Aug 8	College In-Service / COLLEGE CLOSED
Aug 12	Orientation for General Education / Program Students
Aug 15	Fall Semester Begins / Tuition and Fees Due
Aug 16	Courses 8 weeks or less last day to receive a 100% refund*
Aug 19	Courses 9 – 15 weeks last day to receive a 100% refund*
Aug 26	Financial obligation deadline (See page 20)
Sept 5	Labor Day / COLLEGE CLOSED
Oct 6-7	Fall Break (no day or evening classes)
Oct 14	Last day to adjust financial aid for the fall semester
Nov 21-25	Thanksgiving Break / COLLEGE CLOSED
Nov 28	Classes Resume
Dec 12-16	Final Exams
Dec 17	Commencement
Dec 26-Jan 2	Christmas Break / COLLEGE CLOSED

2017 Spring Semester

Jan 12	Orientation for new program students (starting spring semester)
Jan 16	Martin Luther King Day / COLLEGE CLOSED
Jan 17	Spring Semester Begins/ Tuition and Fees Due
Jan 18	Courses 8 weeks or less last day to receive a 100% refund*
Jan 23	Courses 9 – 15 weeks last day to receive a 100% refund*
Jan 31	Financial obligation deadline (See page 20)
March 15	Last day to adjust financial aid for the fall semester
March 20-24	Spring Break (no day or evening classes)
March 24	COLLEGE CLOSED
March 27	Classes Resume
April 14	Open House
May 8-12	Final Exams
May 13	Commencement
May 29	Memorial Day / COLLEGE CLOSED

2017 Summer Semester

May 30	Summer Semester Begins / Tuition and Fees Due
May 31	Last day to receive a 100% refund*
July 3-4	4 th of July Observed / COLLEGE CLOSED
July 5	Classes Resume
July 21	Summer Semester Ends

Refer to Enrollment Management Calendar on MATC Online for specific Withdrawal dates on courses.

ABOUT MANHATTAN TECH

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
230 S. LaSalle Street, Suite 7-500
Chicago, IL 60604
800.621.7440
<http://www.ncahlc.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

National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
5600 N. River Road, Suite 72
Rosemont, IL 60018
773.714.8880

ADMISSIONS

General Admission Requirements

Students who want to attend a Manhattan Tech academic program must submit the materials below to be considered for admission:

1. Application and application fee for admission-The application can be found online at Manhattan Tech's website. Application is valid for three (3) consecutive years after which point a new application and application fee is required.
2. Student MUST provide Manhattan Tech an official transcript verifying graduation from an accredited high school, registered home-school, or a General Education Development (GED®) diploma, unless covered under Specific Admissions Qualifications.
3. Students must provide the college with all post-secondary institution transcripts.
4. All students seeking admittance will be required to meet college placement assessment criteria.

Due to the limited class sizes and admission requirements applicants are conditionally accepted to Manhattan Tech. Admittance into a program is on a first-applied basis for all programs except Advanced Biotechnology, Medical Laboratory Technology, Practical Nursing, Associate Degree Nursing, and Dental Hygiene. We encourage applicants to visit with the Admissions Coordinator to discuss their options.

Guest Student Admission Requirements

A person can be admitted to Manhattan Tech as a Guest Student if the student meets the following criteria at Manhattan Tech:

1. Is not seeking federal financial aid or institutional aid, and
2. Is taking classes for personal enrichment/skill enhancement, and
3. Is not seeking an approved certificate or degree from Manhattan Tech.

Guest Students must meet Manhattan Tech program and course prerequisites. Manhattan Tech is accredited by the Higher Learning Commission and is a member of the North Central Association of Colleges and Schools; therefore, a majority of Manhattan Tech credits will transfer to other institutions of higher learning. If transferring courses to another institution, it is the students' responsibility to check with the advising office at the receiving institution to ensure transferability of courses. Students may be concurrently enrolled at Manhattan Tech and another college or university. Guest Students at Manhattan Tech will experience a streamlined admissions process and will have the opportunity to bypass the student advising process. Guest Students who wish to declare a major/seek a degree and /or receive federal financial aid should follow the general admissions requirements process. A Guest Student who falsifies admission information will be subject to dismissal.

Acceptance into MATC Programs

Applicants will receive notification of acceptance into their program of study via mail at the address provided on the application after the completion of admission requirements. Students should reference the program of study for specific admission criteria. Acceptance is conditional, contingent upon the applicant's completion of admission and program requirements as well as attendance at New Student Enrollment/Orientation. If a student does not attend New Student Enrollment/Orientation, then he/she will forfeit his/her spot in the program to a student on the stand-by list that attended New Student Enrollment/Orientation.

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.

High School Students / Concurrent Enrollment

Students 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 waiver for technical tiered courses. See a counselor/advisor for more information.

MATC's Concurrent Program provides high school students the opportunity to enroll in college courses taught at the high school. The student would receive both high school and MATC college credit for the course. MATC courses taught at the high school follow the same course outline, outcomes, and competencies as the courses offered on campus.

Admission Guidelines for Concurrent Credit/Dual Credit for High School Students:

1. Interested students should consult with their guidance counselor to determine course interest and eligibility.
2. High school sophomores, juniors, and seniors are eligible.
3. If the student is a sophomore, he/she must obtain the PRINCIPAL'S signature on his/her enrollment form.

4. The high school student must meet placement score requirements for general education courses.
5. The student may enroll as a freshman if he or she is classified as gifted. A copy of the Individual Education Program (IEP) and enrollment form must be turned into MATC.
6. If interested in enrolling please refer to the website www.manhattantech.edu.

Please note these guidelines apply to homeschooled students as well receiving dual credit.

High school students who wish to enroll in courses held on campus at MATC or online that are not obtaining Dual Credit will follow standard entrance specifications. Refer to General Admission Requirements for those provisions.

International Students

Manhattan Area Technical College is not authorized by the U.S. Department of Justice, Bureau of Citizenship and Immigration Services to accept students seeking admission through a foreign student visa.

Special Entrance Requirements for Undocumented Non-United States Citizens

Non-United States citizens are defined as applicants who do not possess a lawful U.S. immigration status. Additionally, undocumented students are not eligible for federal financial aid/assistance. To be eligible to apply for admission to Manhattan Tech the applicant must meet the following qualifications for the state of Kansas:

1. Provide records that they have attended an accredited Kansas high school for three or more years and graduated from an accredited Kansas high school or obtained a GED diploma in Kansas.
2. File an affidavit with Manhattan Tech stating that they have filed an application to legalize their immigration status or filed for US citizenship or that their parents have filed such an application. Affidavits are available by meeting with the Director of Admissions.

In addition to meeting the state of Kansas special entrance requirements, undocumented non-U.S. citizens must meet all college entrance requirements.

Entrance Assessments

Students must qualify to enroll in: Writing (English Composition I, English Composition II, or Technical Writing) and Math (Technical Math I, Technical Math II, Beginning, Intermediate, and College Algebra) through meeting college placement assessment criteria. College placement assessments are given at various times throughout the school year and can be scheduled by contacting Manhattan Area Technical College. Students taking assessment testing for the first time will incur no cost for the exam, as long as they are seeking enrollment at Manhattan Tech. Anyone retesting for Manhattan Tech will be charged \$10.00 USD per assessment. Placement in English and Math courses are determined by completion of college placement assessment criteria. Students who have undergone placement assessment testing or ACT testing within three years of their Manhattan Area Technical College enrollment date may use those scores as part of the evaluation process to determine their placement in general education courses. An official copy of those scores must be sent to Manhattan Tech to be considered.

Equivalent courses transferred in to Manhattan Tech may satisfy the English and Math placement assessments. Students must have earned a grade of C or higher from an accredited institution, and an official transcript must be sent to Manhattan Tech to be considered. *Additional information for Other Course Credit Options is available on page 13.*

TOEFL Testing

All students who are applying for the Practical Nursing or Associate Degree Nursing 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.

The test used to measure English proficiency as set by the Kansas Board of Nursing, is the Test of English as a Foreign Language (TOEFL). Each area must meet the minimum requirements in the categories listed below:

- Writing: 20
- Speaking: 20
- Reading: 19
- Listening: 20

The TOEFL is the Preferred Examination used by most Colleges and Universities in the U.S. Manhattan Tech does not administer the TOEFL. This exam is administered worldwide at scheduled times throughout the year.

Locally, registration forms for testing may be obtained from the Office of Testing of Programs and Services (Room 101) of Holton Hall on the campus of Kansas State University. A student can reach their office at 785.532.6492 or email them at testing@k-state.edu.

Social Security Numbers

Each entering American student is asked to provide a social security number upon enrollment. No student may receive financial aid from any federally funded program or be employed by the College unless the Social Security number is on file. Social Security numbers are used for identification purposes only. New students to Manhattan Tech are assigned a computer-generated student ID number that appears on their student ID card.

The Family Educational Rights & Privacy Act of 1974 (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to the student's education records.

MATC complies with the Family Rights and Privacy Act of 1974 by using the following policy regarding access to, and protecting the confidentiality of, student records. For more information, call 800-729-6222 (KS only) or 620-432-0302.

Upon written request to the Registrar, any student of MATC will be granted access to and review of any or all records pertaining directly to said student. Access to records will be granted no more than forty-five (45) days following such request. If information in these records is found to be inaccurate, misleading, or detrimental to the student, the student can request in writing an amendment to a record and clearly identify the part of the record the student wants changed and specify why it should be changed.

If the college decides not to amend the record as requested, the college will notify the student in writing of the decision. The student can appeal this decision through the college appeal process.

No personally identifiable records from MATC will be released to parents, spouse, or others without the expressed, written consent of the student. Within the provisions of the Family Rights and Privacy Act, access will be granted to the following without the consent of the student:

- a) school officials, including teachers and administrators, who have a legitimate educational interest;
 - ❖ A *school official* is a person employed by the College in an administrative, supervisory, academic or research, or support staff position (including law enforcement or security unit personnel and health staff); a person or company with whom the College has contracted as its agent to provide a service instead of using College employees or officials (such as an attorney, auditor, or collection agent); a person serving on MATC College Board; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.
 - ❖ A school official has a legitimate education interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for the College.
- b) officials of schools to which the student wishes to transfer;
- c) authorized representatives of the Comptroller General of the United States, the Secretary of Education, or an administrative head of an education agency;
- d) in connection with the student's application, receipt or continued eligibility/status for financial aid, or
- e) court order.

Should a student owe the College any delinquent amount, official records will not be released to the student or a third party. However, this does not preclude the student from personally reviewing his/her records and challenging any of the information. Financial aid transcripts may be sent at the request of other institutions.

Students have the right to file a complaint with the US Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the office that administers FERPA is:

Family Policy Compliance Office
US Department of Education
600 Independence Avenue, S.W.
Washington, D.C. 20202-4605

Directory Information

Items defined by the college as "directory information" may be released without a student's written consent. FERPA permits the College to limit the disclosure of and to use its discretion when choosing whether or not to release directory information to specific parties, for specific purposes, or both. In the exercise of that authority, MATC may release directory information to college employees/trustees and on-campus publications designed to promote student achievement or events or otherwise serve to advance the interest and image of the college. Examples include graduation programs, etc. In addition, two federal laws require the college to provide military recruiters, upon request, with student names, addresses and telephone listings.

The college designates the following as directory information:

- Student's name
- Address
- Telephone number
- Email address
- Major fields of study and classification
- Full- or part-time status
- Semesters of attendance
- Degrees, awards and honors received

Students who wish to prevent disclosure of directory information must inform the Registrar in writing. Students who submit this request should note that this action will exclude their name from certain college publications.

ACADEMIC INFORMATION

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, transfer to a four-year college or university, as well as the creation of life-long learners.

Academic Programs

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

- Air Conditioning and Refrigeration
- Automotive Collision Repair
- Automotive Technology
- Biotechnology
- Building Trades
- Business Administration
- Digital Drafting Design Technologies
- Dental Hygiene
- Electric Power & Distribution
- Facilities Maintenance Technology (suspended)
- Information & Network Technology
- Medical Laboratory Technology
- Practical Nursing
- Associate Degree Nursing
- 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, and maintain a minimum GPA of 2.0. 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 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
 - 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

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.

MATC coursework 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 Student Services staff 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 Student Services staff 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.

Two-year technical programs that lead to an A.A.S. degree upon completion of general education requirements include the following:

- Automotive Technology
- Advanced Biotechnology Laboratory Technology
- Business Administration
- Digital Drafting Design Technologies
- Dental Hygiene
- Information and Network Technology
- Medical Laboratory Technology
- Associate Degree Nursing

Students who complete general education requirements and technical electives after completing a Certificate in one of the technical program areas will be awarded an A.A.S. degree. See specific program pages for suggested technical electives.

Reverse Transfer

Should an MATC student decide to transfer to a university prior to completing a degree at MATC, within a student's first semester, each university will now notify all students who transfer coursework from a community college or technical college if they are eligible to be considered for reverse transfer degree status, and which courses are needed to finish the related degree. Students who then complete the coursework for a given associate's degree are eligible to receive that degree, administered automatically by correspondence between the university and community college or technical college the student last attended. For more information, visit with the MATC Registrar.

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 30 technical program of study credit hours (15 credit hours each from two different programs of study), 15-17 technical credits, plus completion of 15-17 credit hours in general education courses completing a minimum of 62 credit hours to develop a technical program with a focus directly related to the student's career objective. This degree is two years in length and utilizes previously approved courses in Kansas Board of Regents approved programs.

Additionally, students who choose to complete an Associate of Applied Science degree in a technical program of study with an additional 15 credit hours from technical study electives in qualifying programs of study, totaling a minimum of 62 credit hours may be awarded the Associate of Applied Science in Technical Studies.

Example: Complete a certificate in Air Conditioning and Refrigeration program (34 technical credits/6 general education credits) + 15 technical credits in Business Administration program + 9 credits in General Education = 64 credit hours

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
 - 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

Students interested in owning their own business should consider the course options on page 43.

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 and who have 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 prior to completion of the technical program. The Vice President of Academic Affairs must approve any exceptions.

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

- Air Conditioning and Refrigeration
- Automotive Collision Repair
- Biotechnology
- Building Trades
- Business Administration
 - Accounting
 - Business Administrative Technology
 - Medical Office Administration
- Digital Drafting Design Technologies
- Electric Power and Distribution
- Facilities Maintenance Technology (suspended)
- Practical Nursing
- Welding Technology

Stand Alone Parent Programs (SAPP)

A certificate of completion is awarded to students who have successfully completed requirements related to each Stand Alone Parent Programs (SAPP).

Manhattan Tech provides a certificate of completion for the following courses:

- Certified Nursing Assistant (CNA)
- Certified Medication Aid (CMA)
- Phlebotomy

For a complete list contact the Registrar.

Graduation Requirements

Students who intend to graduate with a technical Certificate and/or Associate Applied Science degree must complete the following requirements to participate in graduation.

- Submit the Intent to Graduate form available at Manhattan Tech's website and \$25 fee to the Registrar.
- Satisfactorily complete all course work for technical certificate/degree.
- Achieve a cumulative GPA of 2.0 or higher.
- Have no more than 6 credit hours of course requirements remaining to complete the Certificate/Degree.
- Fulfill all financial obligations to Manhattan Area Technical College as well as Financial Counseling, if applicable.

Other Course Credit Options

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. An official transcript is required for transfer credit. Only course work with a grade of C or higher may be transferred.

***Manhattan Tech does not accept faxed transcripts as official from higher education institutions.**

Before enrolling in courses through another college or university, contact 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 registrar or 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.

Prior Learning Credit

Students may seek award of credit for prior learning through Advanced Placement (AP), VA National Testing Program (DSST), College Level Examination Program (CLEP), education credit for training programs, credit by examination, and credit for Prior Learning Assessment (PLA). Prior Learning Credit will be transcribed as a letter grade of "CR" depending upon AP Score.

For specific information about how to apply for prior learning credit refer to policy 5.1.3 and/or contact MATC Student Services.

- **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
Statistics	5	Elem. Stats	3	A
	4	Elem. Stats	3	B
	3	Elem. Stats	3	Cr

- 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.
- 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.
- 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 Guide to evaluate those courses delivered through the Air Force, Army, Coast Guard, Department of Defense, Navy, and the Marines. For Army veterans, the Joint Services Transcript (JST) will provide a transcript of ACE credit recommendations for all coursework completed while in service, the military occupational specialties (MOSs) held, and examinations passed.
- Credit for Business Training**
 Credit is evaluated using the ACE College Credit recommendation.

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.

Virtual Learning Campus

Online Education at Manhattan Area Technical College provides online and blended learning opportunities to enrich the college as a whole and help it extend its mission. To ensure all courses offered to distance students are well designed, expertly taught and adhere to practical considerations, all online learning at Manhattan Tech will:

- Align with our values of excellence, integrity and student-centeredness, and our mission to provide quality performance-based education
- Engage our students in meaningful, active learning to address the needs of a variety of learning styles

3. Support our students, instructors and staff with the feedback they need to succeed while involved in online education
4. Hold our students and instructors to a high level of accountability and performance standards
5. Use our assessment and evaluation processes to assure quality of online course design and instruction, and improve student learning
6. Provide our instructors with support, resources, and training in current pedagogies for high-quality online and blended instruction
7. Provide our students with comprehensive advising and support regarding online learning

Online and Blended Formats

Online and blended courses require coursework to be submitted through the online learning environment, called the Learning Management System or LMS.

- **Online courses** do not meet in person regularly. All traditional concurrent instruction and interaction is replaced by web-based online learning and collaboration.
 - At least seventy-five percent of contact is online
 - Requires compliance with the online attendance policy
 - Requires at least two (2) proctored events in a 16-week semester. Typically, mid-term and final.
 - Course Code begins with “15”
- **Blended courses** will convene in person weekly, but a large portion of the traditional concurrent instruction is replaced by web-based online learning. Students are expected to absorb and engage with an exceptionally large amount of content on their own outside of class.
 - Fifty percent to seventy-five percent of contact will be online
 - Requires compliance with the online attendance policy
 - Requires attendance at the concurrent sessions
 - Required meeting dates and times published on the course schedule
 - Included in tentative course schedule of the course syllabus
 - Course Code begins with “1B”

Contact your advisor or onlinehelp@matc.net with additional questions regarding this learning opportunity.

Before Enrolling

Take a moment to consider the following about online and blended learning:

Policies

- There is an additional fee for enrollment in online or blended courses.
- Instructors require at least one (1) proctored, in-person event every 8 weeks.
- A unique attendance policy is applied to online/blended courses.

Time Commitment

- Online learning should be viewed in the same light as a concurrent class. It will not be an “easier” course, nor will it take less time or energy.
- Participants must be responsible and self-disciplined to keep up with the course. Time management is extremely important.
- Although you may feel you are working through the course on your own schedule, it is mandatory to meet deadlines established by the college and its instructors.
- The Learning Resource Center staff is available to assist students in developing the time management skills and study habits necessary for online learning.

Communication

- Most content and interaction is through writing. Know how to express yourself professionally in writing and be comfortable communicating electronically.
- It is important to know your instructor, how to contact him or her, to communicate regularly, and to maintain a course presence.
- Emails should receive a response within 24 hours during the school week.

Digital Access

- You should be familiar with the Internet, email use, downloading, uploading and saving files.
- An accessible and reliable internet connection is required. Cable or DSL is recommended.
- Assignments should be in a format offered by Microsoft. The college provides a free installation of Microsoft Office suite with a valid student email account. See <https://matconline.matc.net>.

- Minimum hardware and software is also required. See www.manhattantech.edu/sys.

Hardware

	Minimum Required	Recommended
Operating System	Microsoft Windows 7	Microsoft Windows 8.1 or Microsoft Windows 10
Hardware	Intel Pentium (Sandy Bridge) or AMD A6 (Trinity) or better	Intel I3 (Sandy Bridge) or AMD A8 (Trinity) or better
Mobile Devices	We require students to have some form of laptop or desktop.	If you choose to use a supplemental device, we recommend the Microsoft Windows 10 or Android 4.4 operating system.

Software

	Purpose	Where To Get It
Internet Explorer 10	Online courses are best viewed using Internet Explorer 10 or higher.	https://www.microsoft.com/en-us/download/internet-explorer.aspx
Mozilla Firefox	You should also have at least one alternative web browser on your device.	https://www.mozilla.org/firefox
Google Chrome		https://www.google.com/chrome/browser/
Adobe Reader	To view PDFs	These three are available to download at http://www.adobe.com/downloads/other-downloads.html
Adobe Flash Player	To view multimedia and stream video/audio	
Shockwave Player	To view multimedia	
Java Run Time Environment	To view and use websites and applications	https://java.com/en/
Microsoft Silverlight	To interact with Web and mobile applications	https://www.microsoft.com/silverlight/

- If you are unsure as to whether or not your computer meets these requirements, or if you require any technical assistance, please contact the IT Help Desk.
- Your program or instructor may require specific hardware, software or apps.

Access Your Online Class

A valid student User Name is required. To obtain this, please check the inbox for the personal email address you provided on your admissions application. A welcome message will contain your User Name and an initial password.

To access courses, browse to <https://matconline.matc.net>. In the upper left corner, enter your User Name and Password, and then click the Login button. If you are not sure of your User Name and Password, click on the Help tab—top. In the left sidebar, click “Reset Password.” If you wish to change your password from the one given to you in your welcome email, click “Change Your Password” under Quick Links—left sidebar.

Once logged in, your courses will now be available under My Course in the left navigation Quick Links box. After clicking the [+] icon to the left of My Courses, a list of all of your courses—including your face-to-face courses—will appear. Locate your online course(s) and click the link to be directed to your online class website.

IMPORTANT: Instructors can open their courses up to fourteen (14) days in advance of the semester, so you may be able to access your courses prior to the official start date, in order to familiarize yourself with the layout of each course. Please contact your instructor for details.

Prepare for Your Online Class

To tour an online course, go to <https://matconline.matc.net> and click *How To Navigate MATCOnline*. Here you can tour the typical layout of an online class and a video tour of an online class.

The college also provides a free, non-credit course NCR 111: Online Orientation for Students. This is a scheduled, in-person demo course that offers a supportive space to navigate a typical online course. The instructor guides you through basic tasks within the online format and answers questions along the way.

Enrollment in NCR 111 occurs on an ongoing basis. Arrange to be enrolled in this course by contacting your advisor. You can also be enrolled by communicating with the LMS Administrator directly at onlinehelp@matc.net.

First Day of Class

To start the semester out on the right foot, you should attend the Online Orientation for Students (see above). Following this, you should also:

- Check your email for your instructor's welcome message.
- Email your instructor to introduce yourself and ask questions.
- Download and print the class syllabus in from the class main page.
- Locate the first assignments inside the first class module.

College Email

All members of the college community have a @manhattantech.edu email address. We require you to use email for your coursework. You will also receive official college correspondence only through this email address. It will be important to have your email set up and accessible before the beginning of classes.

Check your Webmail inbox often. We recommend doing so daily. In order to access your email, log into MATC Online and click on the MATC Webmail link under Quick Links—left navigation. Once you reach Webmail, select the link for Students. You will then need to enter your full @manhattantech.edu email address and password. Click Sign in.

Academic Expectations

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

Falsification and Fabrication

- Altering, counterfeiting, or inventing information or material presented in an academic evaluation activity;
- Presenting data in a piece of work that were not gathered in accordance with guidelines defining appropriate methods for collecting or generating data
- Including substantially inaccurate account of the method by which the data were gathered or collected.

Abuse of Academic Materials

- Destroying, stealing, altering, or making inaccessible library, laboratory, or other academic resource materials, including computer data, or attempting to do so
- Stealing examinations, or other course materials, or attempting to do so

Complicity in Academic Dishonesty

- Helping, or attempting to help, another to commit an act of academic dishonesty
- Providing material or information to another person with knowledge that the material or information will be used deceitfully in an academic evaluation activity
- Permitting one's own work to be submitted by another person as if it were that person's original work.

Falsification of Records and Official Documents

- Altering documents affecting academic records

- Forging signature of authorization or falsifying information on any official academic document, including a permission form, a petition or any other document designed to meet or exempt a student from an established academic regulation
- Failing to report previous academic records.

Personal Misrepresentation and Proxy

- Participating in an academic evaluation activity in the place of another person either before or after enrollment
- Assisting in any arrangement whereby any work, placement or proficiency tests, classroom performance, examination or other academic evaluation activity is submitted or performed by a person other than the student in whose name the work is submitted or performed
- Having another person participate in an academic evaluation activity or evaluation in place of oneself

Bribes, Favors, Threats

- Bribing or attempting to bribe, promising favors to, or making threats against any person, with the intention of affecting a record of a grade or evaluation of academic performance
- Conspiring with another person who then performs one of these acts in one's behalf.

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 "XF" 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.

General Complaint and Grievance Policy

Manhattan Area Technical College administration, faculty, and staff attempt, in good faith, to resolve complaints and problems as they arise, in a timely manner and at the lowest possible level. However, if a matter remains unresolved, the purpose of the grievance procedure is to provide a process for resolving complaints between students, faculty, and staff. These procedures apply to all complaints including but not limited to, academic issues, student services or administrative concerns, and working conditions. For matters involving any form of discrimination or harassment refer to MATC Policies 3.7.1, 3.7.2, or 7.1.1.

Policy: Students and employees of Manhattan Area Technical College have the right to pursue timely, legitimate grievances against other members of the college community. Therefore, the administration shall establish, publish, and follow a procedure that delineates the rights and responsibilities of the aggrieved party and the college employee or student against whom a grievance may be lodged. The procedure shall provide for adequate time to file and investigate allegations, for individuals to present information or evidence in support of his/her positions, and for any party directly involved in a grievance to pursue an appeal of an adverse decision.

Students and employees of the Manhattan Area Technical College may file a complaint without fear of reprisal. Any individual who supplies false or misleading information in conjunction with a complaint or anyone who attempts to harass, intimidate, or retaliate against an individual for filing a complaint or for providing information in connection with a complaint filed under this procedure will be subject to disciplinary action consistent with the provisions on the college's disciplinary policy. A copy of the complete policy and appropriate documentation may be obtained from the Student Services office.

Complaint Process (must be completed prior to moving on to the Formal Grievance Process)

Any individual, who believes that a wrong has incurred, should try to resolve the problem through consultation with the individual(s) involved as soon as is reasonably possible. In most cases, the Complaint Process must be completed prior to moving on to the Formal Grievance Process. Exceptions must be approved by the appropriate Office of Primary Responsibility (OPR):

- For students that is the Vice President of Student Services
- For faculty that is the Vice President of Academics

Formal Grievance Process

Once you have made an attempt to resolve your complaint through discussion, if you are not satisfied with the outcome, you may begin the formal grievance process. A formal grievance should be filed with the appropriate Office of Primary Responsibility (OPR) not more than 21 days after the act(s) in question occurred. He/she may help you fill

out the Formal Grievance questions and will make a determination if your concern is truly a grievance as defined by policy or not. If it is, he/she will begin the investigation process after you turn in the form. The OPR will have up to 10 days to investigate and schedule a solution meeting. Please note, if your grievance is with your assigned OPR, you may meet with the College President to begin a formal grievance.

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.

Students not attending class the first week of the semester will be administratively dropped. The instructor will notify the Registrar that the student should be administratively dropped, which will not reflect on the student's transcript.

Attendance Policy for Online/Blended Courses

The full online attendance policy will be stated in your syllabus. In the event that any of the requirements below are not completed, your instructor will notify you by Manhattan Tech 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.

Within the first 6 business days of the course, the student must:

1. Log in. Your instructor can analyze your online activity and track how often you have logged in.
2. Read the syllabus and all policies. Successfully complete the Computer Usage & Academic Honesty online quiz.
3. Complete assignments indicated by the instructor.

Students not completing the three criteria above will be administratively dropped from the course. The instructor will notify both the student and the Registrar of the situation.

During the first four weeks of a 16-week course or the first two weeks of an 8-week course – an assignment must be completed each week.

- An assignment may be, but is not limited to, any of the following: forum posting, quiz, exam, file upload, email reply to instructor through Manhattan Tech webmail, and/or writing assignment.
- The instructor will choose assignments that are acceptable to meet the requirement.

Drop/Withdrawal Policy

An official drop/withdrawal is the date a completed Drop/Add or Withdrawal Form is received by the Student Services Department in the main office of Manhattan Area Technical College. A student considering withdrawal should first talk with an MATC advisor or instructor for clarification of options.

If a course is equal to or greater than 9 weeks, a student may officially drop from a course with no transcribed notation of enrollment if the Drop/Add or Withdrawal form is completed and received by the MATC office within 5 business days of the start of the course. If a course is 8 weeks or less, a student may officially drop from a course with no transcribed notation of enrollment if the Drop/Add form is completed and received by the MATC office within 2 business days of the start of the course. A grade of W will appear on the student's transcript if the student officially withdraws from a course prior to 75% of the course being completed for the semester (see the enrollment calendar for exact dates). If 75% of the course has been completed, an earned grade cannot be changed to a W, and the student will receive a transcribed grade based on work completed relevant to the course requirements. Refer to the Tuition Refund Policy in the Financial Obligations section of the catalog for applicable refund dates.

Faculty / Administrative Withdrawal Policy

If a student is absent during the official Drop/Withdrawal period 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 request to withdraw the student from the class roster on the sixth consecutive day by providing a completed Drop/Withdrawal form and an explanation to the Vice President of Student Services. An Administrative Withdrawal (AW) will appear on the student's transcript for the course(s) the request references. If the excessive absenteeism occurs outside the official Drop/Withdrawal period, the student will be awarded the appropriate grade at the end of the course. The student will be responsible for any financial obligations as outlined in the Tuition Refund Policy. Any student who is withdrawn from a class roster due to excessive absenteeism may appeal to the Vice President of Student Services for reinstatement in the class.

Readmission Policy

A student who withdraws from a program may return with completion of an MATC Admission Application. 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 an MATC advisor for clarification of options.

A student who is dismissed due to disciplinary action or academic reasons may be re-admitted contingent on the following: 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.

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 the program. Readmission is not guaranteed.

Financial Obligations

Tuition and Fees

Tuition and Fees should be paid by the first day of each semester and are determined by the number of credit hours in which a student is enrolled and additional costs such as tools, uniforms, etc. A student who has not met this obligation within 10 business days after the start of the semester for fall and spring semesters may be dropped from their courses with Manhattan Area Technical College. The payment deadline for the summer semester is 5 business days after the start of the semester. This does not apply to financial aid and VA education benefit recipients that have completed the *entire* financial aid or VA certification process. For those students, payment will be expected from the first financial aid disbursement. If financial aid or VA education benefits are not sufficient to cover the full tuition and fee balance, the student is responsible for the remaining balance owed immediately. A student should contact the Office of Financial Aid to determine where they are in this process.

Payment

Payment for classes is due no later than 10 business days after the start of the semester for fall and spring courses and 5 business days after the start of the semester for summer courses. Students who have not paid or made arrangements for payment through the Student Account Coordinator by the payment due date will be dropped from their courses. Students whose courses have been dropped may re-enroll if courses are still available and payment arrangements are made at the time of enrollment.

- You may pay your account balance online at <https://matconline.matc.net/ics>, by logging in to your student portal, accessing your account from the student tab and following the links. You may pay using a credit or debit card. If you have questions regarding online payments, please contact the Student Account Coordinator at 785.320.4512 or StudentAccounts@manhattantech.edu.
- To mail payments, students should send check or money order with full name, ID#, and program to:
Manhattan Area Technical College
Attn: Student Account Coordinator
3136 Dickens Avenue
Manhattan, KS 66503

Manhattan Tech Payment Plan

Manhattan Area Technical College offers a payment plan as an option. The Manhattan Tech payment plan allows students to pay for tuition, student fees, and course fees in monthly installments when enrolled in non-continuing education courses for fall, spring, and/or summer.

No interest or finance charges are assessed, but a 10% down payment plus a \$25 non-refundable set-up fee are due at the time the payment plan agreement is signed. Manhattan Tech accepts cash, check, money orders, credit, and debit card. The remaining balance will be divided into monthly payments over the current semester, due by the fifteenth of each month.

NOTE: OFFICIAL TRANSCRIPTS AND DIPLOMAS WILL NOT BE RELEASED UNTIL PAYMENT IS MADE IN FULL.

What Students Need to Know about Manhattan Tech's Payment Plan:

- A business hold will be placed on the student's account. Once the balance has been paid in full, the hold will be lifted. A business hold prevents a student from enrolling in additional courses, upcoming semesters, an official transcript and/or diploma.
- Students are responsible for the full amount of tuition, fees, lab fees and other charges on their account unless they officially drop and/or withdraw within the refund period.
- Failure to attend classes or lack of attendance does not constitute an official drop. Students are still responsible for the balance due on their accounts.
- Final payments are due prior to the last day of the class in that semester.

- For any changes, students must contact the Student Account Coordinator at 785-320-4512 or StudentAccounts@manhattantech.edu.
- Students will not be able to register in additional classes or upcoming semesters if there are any outstanding balances on their accounts. Accounts will be turned over to collections and/or the Kansas Setoff program if left unpaid at the end of the semester.

Tuition Refund Policy

The Registrar's office has been designated as the official office for drop and withdrawal notification. Refunds are calculated based on the day a student officially drops a class after which a Drop/Withdrawal Form is received by the Student Services Department in the main office of Manhattan Area Technical College. If a student has completed registration in a class and wishes to withdraw from a class or classes in which he/she is enrolled, the student will receive the following refund: 100% refund if the completed drop form is received by the registration office within 5 business days of a course that is equal to or greater than 9 weeks, and 2 business day of a course that is 8 weeks or less. No refund will be given after the refund period. A specific date for the end of the 100% refund period for each semester will be published in the academic calendar for that semester. If MATC exercises its right to cancel a class, a full refund will be issued.

Military-Related Refund Policy

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. Students receiving financial aid will be subject to the refund policies of the agencies sponsoring the aid.

If the student chooses to withdraw from courses during the designated drop/add period of the semester, no entry will be made on a student's transcript. If the student withdraws any time after the designated add/drop period, the grade of "W" will be assigned.

All refunds are contingent upon verification of status through official military documentation. A student's request to withdraw must be made within one week of being called to active duty and may be made by either the student or other party who can provide proof of legal authorization to act upon the student's behalf.

Any student who volunteers for military service during an academic term will be subject to MATC's official Tuition Refund Policy.

Medical Withdrawal Refund Policy

A student may request a refund and a complete withdrawal from the college or all courses for medical purposes upon review of appropriate documentation from a physician by the Vice President of Student Services. Known medical conditions, injury or illness that has not changed materially since the time of enrollment in the course/program of study is not eligible.

No refund of fees and tuition is due for any classes for which the student is awarded full credit. Students receiving financial aid will be subject to the refund policies of the agencies sponsoring the aid.

Returned Checks Policy

If a check made payable to Manhattan Tech is returned for any reason, a returned-check fee of \$25 will be charged for each returned check. The student will be notified at his/her current student address if a check is returned. If the payment is not made to the College within ten days, the matter may be referred to a collection agency. The student's records will be placed on hold until the returned-check fee and all outstanding MATC financial obligations have been paid. Once a student has a returned check, the College will accept only cash, money order, Visa, MasterCard, AMEX or Discover as payment.

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.

FINANCIAL AID

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 1 for the Fall semester and December 1 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 1st 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.

Withdrawing

If you withdraw or stop attending before the semester is completed, you may be required to repay "unearned" financial aid. The percentage of unearned aid is equal to the number of calendar days remaining in the term divided by the number of calendar days in the term.

Any unearned funds returned to the Federal Student Aid program on your behalf will show as a balance owed on your MATC account statement. Failure to repay balances owed will prevent future enrollment at MATC.

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 repeated and 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 will be placed on probation or 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 Student Services 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-\$5,775 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 typically 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 \$10500 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-time. Repayment on this loan begins six months after the student leaves school or drops below half-time enrollment status. For first-time borrowers on or after July 1, 2013 there is a limit on the maximum period of time that you can receive Direct Subsidized Loans. Please see studentaid.ed.gov for more details.

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.

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 as well as completing an application on studentloans.gov.

Scholarships

MATC has over 20 Scholarships available to students throughout the year. Refer to the Foundation Resources section for additional information.

Kansas Board of Regents Scholarships - An application for the following scholarships is available online at 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.
- American Indian College Fund www.collegefund.org
- Army Emergency Relief Education Programs www.aerhq.org
- Global Automotive Aftermarket Symposium www.globalsymposium.org
- Hispanic Scholarship Fund www.hsf.net
- Sallie Mae Scholarship Program www.thesalliemafund.org
- United Negro College Fund www.uncf.org
- USA Funds www.usafunds.org
- Scholarship search sites www.fastweb.com , www.scholarships.com , www.finaid.org
- 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.

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, www.sercorp.com

United Tribes of Kansas – Educational assistance programs for students of Native American descent. To apply, contact their office at 785.364.2234 or 785-595-3291.

FOUNDATION RESOURCES

Manhattan Area Technical College Foundation

- The MATC Foundation was incorporated in 2006 to promote private support of the College. It is a 501(c) 3 non-profit entity and contributions to the Foundation are tax deductible. The Foundation is governed by a volunteer board of trustees, representative of citizens and businesses throughout the college's service area. The MATC Foundation serves the entire service area.
- Although the Foundation is organizationally and fiscally separate from Manhattan Area Technical College, it utilizes the name and mission of the college and therefore operates only under the approval and sanction of the Manhattan Area Technical College Board of Directors.

Scholarship Opportunities

We currently have over 20 Scholarships available to students throughout the year. Scholarship applications will be due in August for Fall and February for Spring. A reminder email and the application will be sent out to all enrolled and current students prior to the application deadline. We encourage High School students to apply as well. Thank you to our donors for providing resources to our students to further their education.

Please refer to <http://www.manhattantech.edu/> or contact Tracy Geisler at 785-320-4563 or tracygeisler@manhattantech.edu

Alumni

We'd like you to become an integral part of our College community, and we are eager to be your Lifelong Learning Partner!

Whether you graduated from the Manhattan Area Vocational – Technical School, Manhattan Area Technical Center, or Manhattan Area Technical College, you are one of this institution's cherished alumni.

Manhattan Area Technical College has been graduating technically skilled students since it first opened its doors in 1965. Our graduates are vital to the economic development of surrounding area and the state of Kansas they graduate prepared to enter the workforce and become leaders in their fields.

We encourage all alumni to continue their association with Manhattan Area Technical College through alumni activities, college service involvement, continuing education and just visiting campus to see what's happening. Please contact Tracy Geisler @ 785-320-4563 or tracygeisler@manhattantech.edu. Stay in touch by emailing Tracy Geisler, and tell us what you are up to and how we can continue to serve you!

Support Student Scholarships via the MATC Foundation

- Student Scholarships - Donors may designate their gift to student scholarships and may specify the award criteria, such as: undergraduate and/or continuing education student; full time and/or part time student; academic excellence; financial need; major; and profession to be pursued. Scholarships are vitally important in order to attract and retain increasing numbers of excellent and diverse students by providing much needed financial aid.
- Naming Opportunities - Endowed academic funds may be named in honor of the Donors, or a name they designate, for example, in memory or in honor of loved ones.
- Capital Improvements - Donors may designate their gift for the purchase of equipment, such as computers; or they may designate where it is to be invested, such as a library or technical lab. Capital improvements enhance teaching, learning, and administrative facilities. The needs are varied and include the library, computer laboratories, technical laboratories, classrooms, media centers, existing building renovation, and new facility construction.
- Gift Amount - Unrestricted donations to the Annual Fund support capital improvements. \$100,000 is the minimum gift amount to establish an endowed capital improvement fund designated for a specific area, such as the library, nursing or computer laboratories.
- General Fund - Gifts to the General Fund are used at the discretion of the President of Manhattan Area Technical College. Donations to the General Fund are vitally important for they give the President the opportunity to address unexpected and urgent expenses related to student education, academic programs, and/or community outreach.

Organization

Established in 1965, Manhattan Area Technical College has evolved into a public technical college governed by an appointed Board of Directors under a governance plan approved by the Kansas Board of Regents on March 17, 2004. The President of the College reports to the Board of Directors and supervises all College operations and instruction. In addition, MATC is advised by more than 120 volunteer program advisory board members representing a cross section of business and industry.

Funding

Manhattan Area Technical College is funded in part by the Kansas Board of Regents and through the collection of tuition and fees. The College IS NOT funded by any state, county, or local taxes.

Directory

For additional information contact Tracy Geisler at 785.320.4563 or tracygeisler@manhattantech.edu

Executive Director of the Foundation: Jim Genandt, President, Manhattan Area Technical College

Resource Development Coordinator: Tracy Geisler, Executive Assistant to the President/Board Clerk

Board of Trustees

Chair: Fred Willich, Owner, Hi-Tech Interiors

Vice Chair: Ravi Sachdeva, Owner of American Pest Management

Members:

Art Loub – Retired, KSU Foundation

Ron Dickey - Retired, Bluestem Electric Cooperative, Inc.

Ex-Officio Member:

Randall Anderes, President, Intrust Bank

Member of Manhattan Area Technical College Board of Directors, Board of Directors Liaison to the Foundation

STUDENT RESOURCES

Student Organizations

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.

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 minimum 3.5 GPA with at least 12 credit hours.

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 spring development. Our program emphasizes high ethical standards, superior work skills, lifelong education and pride.

Student Government Organization (SGO)

The Student Government Organization 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.

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 accidents that occur during the school year on school premises or during College-supervised activities. Payment for protection is included in the application fee. 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.

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.

Academic Success 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 alumni. Students can receive individual or group assistance with their coursework, study skills, or test taking strategies. 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 Students with Special Needs

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 as mandated under Section 504 and 508 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) Amendments Act of 2008, which prohibit discrimination on the basis of handicap against any "otherwise qualified individual". All students with special needs or disabilities MUST provide medical documented proof to Student Services in order for MATC to provide reasonable accommodations in an academic environment. It is the student's responsibility to request accommodations. All academic work at MATC completed prior to the student self-identifying will not be modified. MATC is not financially responsible for assessing learning disabilities.

Transcripts

Upon written request, former students or graduates may obtain a transcript at a cost of \$10.00 per request. Transcripts are available 10 days after grades are posted. Transcripts are available for continuing education students and for all workforce development students. 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. Visit manhattantech.edu or MATC Online for additional information.

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**.

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.

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 or his designee 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.

CONTINUING EDUCATION AND TRAINING

Advance your skills or develop your career within the health, trades, business and other special interest areas. If you don't see a course currently available, MATC can customize training for your organization. If you need space to hold your training, MATC also rents classrooms, facilities, and computer labs as our schedule allows.

For class availability, visit: <http://www.manhattantech.edu/continuing-education> or contact Director of Continuing Education and Corporate Training at 785-320-4558 or dawnkrause@matc.net.

For admission information please refer to Guest Student Admissions Requirements.

General Business

For over a decade, MATC has trained area business people to meet workforce needs in key areas. Our pool of faculty trainers bring hands-on industry experience into interactive training sessions designed to get your people up-to-speed quickly.

- Supervisory Skills
- Conflict Resolution
- Team-building
- Leadership/Management
- Customer Service

Trades

Tech is our focus, so it's no surprise that our faculty tradespeople are the best in the region. From real-world builders to HVAC practitioners, we deliver hands-on expertise and real-world trade scenarios. On-demand course offerings include:

- Electricity Basics
- Carpentry Basics
- Refrigeration Basics
- Welding Certification
- Basic Welding
- Intermediate Welding

Allied Health

MATC offers certification and recertification courses in the Allied Health professions in CNA, CMA, Phlebotomy, and IV Therapy. These courses are offered throughout the year at our facility, and at applicable clinical sites where required. These courses can provide an entry level into healthcare occupations or can keep current professionals updated on the skills they need to be successful. Please contact the Coordinator of Allied Health and Continuing Education at 785-587-2800 for more details on how best we can meet your healthcare training needs.

Fitness Career Training Online

W.I.T.S. has been training and certifying fitness professionals in partnership with colleges for over 21 years. These online/blended courses are designed for fitness professionals interested in enhancing their skills, meeting continuing education requirements for recertification, earning new nationally-recognized certifications, and gaining the business acumen to either take a management role or pursue entrepreneurship opportunities within the fitness industry.

Special Interest

Our region is growing and so is demand for special skills! We're responsive to workforce trends, so development of specialized programs allows us to foster our region's unique industries.

- Command Spanish© Online
- Geographic Information Systems (GIS)
- Risk Reduction Training
- Biosafety

Online Courses

MATC offers a variety of online courses through Ed2Go – an industry leader in engaging online short courses covering topics such as test prep and web design. These video-based courses are very useful and cost-effective, most under \$150 for instructor-led training over a 6-week period. Here are some popular courses:

Technology – CompTIA A+ certification prep, CompTIA Network+ prep, CompTIA® Security+ prep, Introduction to PHP and a MySQL, various programming language courses

Business – accounting fundamentals, Quickbooks (beginner – intermediate), Excel (basic – advanced)

Computer Applications – Adobe Photoshop, InDesign, Illustrator, Dreamweaver, Flash, Elements, Edge Animate

Health Care and Medical – medical coding, medical terminology

Writing and publishing – grant writing, business writing

For a full-list of available courses, visit: <http://www.ed2go.com/matech/>

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.

Transfer Courses for General Education

MATC provides general education courses that fulfill the A.A.S. degree requirements of the programs at MATC. Additionally, the courses that are offered to fulfill these requirements are approved by The Kansas Board of Regents to be accepted in transfer for general education credit at any public postsecondary educational institution in Kansas.

Each course approved and accepted in transfer for general education credit by the Board is identified by a shared course number that supports a student-first philosophy, and is designed to enhance educational planning and effortless course transfer. A Kansas Regents Shared Number (KRSN) uses a 3-letter prefix and a 4-digit course number to differentiate the KRSN number from individual institution course prefixes and numbers.

The specific MATC courses that are part of the Kansas System-Wide Transfer list are as follows. For a complete listing of the courses that have been approved by the Kansas Board of Regents for transfer as direct equivalents at all public Kansas postsecondary institutions, see http://kansasregents.org/transfer_articulation.

BIO 110 General Biology
KRSN BIO 1010
BSC 125 Anatomy and Physiology
KRSN BIO 2020
CHM 100 Physical Science
KRSN PSI 1010
CHM 110 Chemistry I
KRSN CHM 1010
CIS 100 Computer Applications
KRSN CSC 1010
COM 105 English Composition I
KRSN ENG 1010
COM 106 English Composition II
KRSN ENG 1020

COM 115 Public Speaking
KRSN COM 1010
MAT 135 College Algebra
KRSN MAT 1010
MAT 145 Elementary Statistics
KRSN MAT 1020
NTR 105 Nutrition
KRSN HSC 1010
PSY 100 General Psychology
KRSN PSY 1010
PSY 125 Human Growth and Development
KRSN PSY 2020
SOC 100 Introduction to Sociology
KRSN SOC 1010

Communications

Marlene Sedillos, Ph.D.
785.320.4548
marlenesedillos@manhattantech.edu

Sciences

Matt Schacht, M.S.
785.320.4549
matthewschacht@manhattantech.edu

Mathematics

Brian Koch
785.320.4531
briankoch@manhattantech.edu

Behavioral Science

Sara Fisher
785.320.4513
sarafisher@manhattantech.edu

Air Conditioning & Refrigeration



PROGRAM DESCRIPTION

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 and OSHA 10 certified. **This program aligns with the Kansas Board of Regents curriculum.**

PROGRAM ADMISSION REQUIREMENTS

- College Placement Assessment Criteria
- Current unrestricted driver's license
- A Window's-based device is required for the program

PROGRAM OUTCOMES

Goal # 1

- Diagnose and repair electrical and mechanical problems in heating and cooling systems.
- Design residential heating and air conditioning systems.
- Operate heating and air conditioning equipment properly.

Goal # 2

- Maintain a professional appearance in the workplace.
- Demonstrate interpersonal skills in greeting customers, explaining repairs, and discussing the approximate cost of the service.

Goal # 3

- Inspect work areas and correct safety hazards.
- Work cautiously and safely.
- Demonstrate safe removal procedures from electrical and mechanical components

FACULTY

Frank Avila, B.S.

Air Conditioning & Refrigeration Instructor

785.320.4525

frankavila@manhattantech.edu

Air Conditioning & Refrigeration Curriculum

A.A.S. Degree Requirements

62 Credit Hours

34 Technical Specialty Credits

13 Technical Elective Credits

15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
HVA 103	Safety Orientation / OSHA10*	1
HVA 1044	HVAC Fundamentals	4
HVA 1104	Electrical Fundamentals	4
HVA 120	Domestic Refrigeration	3
HVA 140	Heating System Fundamentals	3
HVA 170	Design and Blueprint Reading	3

*Online class; must be completed in order to enroll in the second semester.

Year 1 Spring Semester

Course #	Course Title	Credit Hours
HVA 130	Controls and 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

Suggested Technical Electives

13 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	3
BUS 126	Introduction to Business	3
BUS 185	Business Ethics and Human Relations	3
BUS 255	Principles of Management	3
DFT 103	Fundamentals of Drafting	3
DFT 1054	CAD Technologies	4
CRT 100	Principles of Information Assurance	1
WLD 260	Agricultural Construction	3

† Additional Technical Elective options are available; see an advisor.

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
See pages 12 for General Education Electives		

Certificate Program Requirements

40 Credit Hours

34 Technical Specialty Credits

6 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
HVA 103	Safety Orientation / OSHA10*	1
HVA 1044	HVAC Fundamentals	4
HVA 1104	Electrical Fundamentals	4
HVA 120	Domestic Refrigeration	3
HVA 140	Heating System Fundamentals	3
HVA 170	Design and Blueprint Reading	3
COM 110	Technical Writing	3
COM 105	English Composition I	

*Online class; must be completed in order to enroll in the second semester.

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 or higher	3

Management/Entrepreneurship

Suggested Courses

*15 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	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

*Complete 5 of the 6 courses listed

See page 45 for additional information

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. Graduates are ready for positions as entry-level non-structural repair, painting and refinishing, and with experience, body shop estimator, body shop managers, as well as insurance adjusters. **This program aligns with the Kansas Board of Regents curriculum.**

The Collision repair program offers the students industry certificates on completion in the following:

I-CAR Steel MIG Welding Certification

I-CAR Platinum Level One Certification in Non-Structural Repair

I-CAR Platinum Level One Certification in Painting and Refinishing

NATEF End of Program Testing and Certification

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

PROGRAM ADMISSION REQUIREMENTS

College Placement Assessment Criteria

Current Kansas driver's license

PROGRAM OUTCOMES

- Demonstrate the ability to implement safety procedures relating to tools and equipment used in the auto collision repair field.
- Possess the knowledge and entry-level skills necessary to understand estimates and industry terminology related to the automotive collision repair field.
- Perform the entry-level skills required in non-structural automotive collision repair as well as painting and refinishing.
- Demonstrate critical thinking skills, teamwork concepts, and trouble-shooting abilities used in the automotive collision industry.

FACULTY

Linn Schroll, A.A.S.

Automotive Collision Repair Instructor

785.320.4545

linnschroll@manhattantech.edu



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Automotive Collision Repair Curriculum

A.A.S. Degree Requirements

65 Credit Hours

43 Technical Specialty Credits

7 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

Suggested Technical Electives

7 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	3
BUS 126	Introduction to Business	3
BUS 185	Business Ethics & Human Relations	3
BUS 255	Principles of Management	3
WLD 260	Agricultural Construction	3

† Additional Technical Elective options are available; see an advisor.

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
See pages 12 for General Education Electives		

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

Management/Entrepreneurship

Suggested Courses

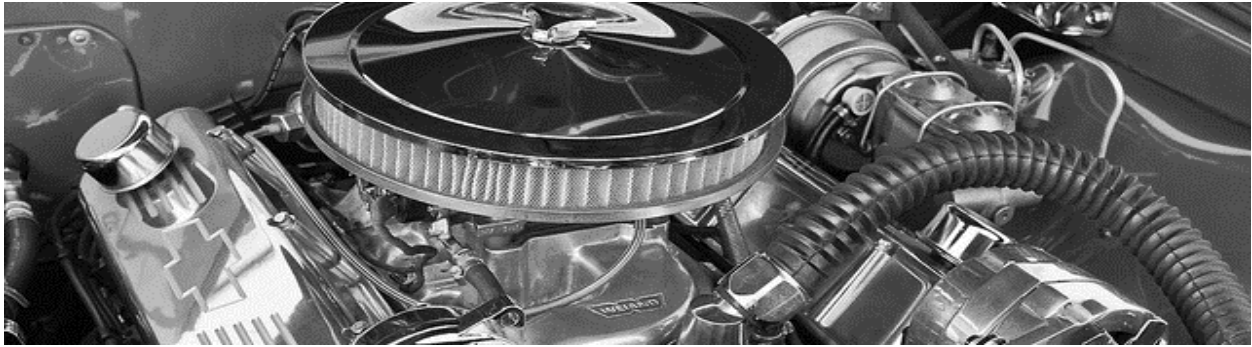
*15 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	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

*Complete 5 of the 6 courses listed

See page 45 for additional information

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.**

PROGRAM ADMISSION REQUIREMENTS

- College Placement Assessment Criteria
- Current Kansas driver's license
- A Window's-based device is required for the program

PROGRAM OUTCOMES

- Possess skills for entry-level placement utilizing the laboratory/shop requirements identified by NATEF.
- Successfully complete the ASE certification examination.
- Develop skills in automotive diagnosis and repair.
- Develop effective communication and interpersonal skills.

FACULTY

Alex Anderson, A.A.S.

Automotive Technology Instructor

785.320.4570

alexanderson@manhattantech.edu

Jeff Pishny, A.A.S.

Automotive Technology Instructor

785.320.4505

jeffpishny@manhattantech.edu



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Automotive Technology Curriculum

A.A.S. Degree Requirements

66 Credits Hours

51 Technical Specialty Credits

15 General Education Credits

Year 1 Fall Semester

Course #	Course Title	Credit Hours
AMT 109	Intro to Automotive Technology	2
AMT 111	Electrical 1	3
AMT 116	Electrical 2	2
AMT 121	Engine Performance 1	3
AMT 125	Engine Performance 2	4

Year 1 Spring Semester

Course #	Course Title	Credit Hours
AMT 149	Suspension & Steering 1	3
AMT 152	Suspension & Steering 2	2
AMT 170	Brakes 1	3
AMT 171	Brakes 2	2
AMT 180	Electrical 3	3

Year 2 Fall Semester

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

Year 2 Spring Semester

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
See pages 12 for General Education Electives		

Management/Entrepreneurship

Suggested Courses

*15 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	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

*Complete 5 of the 6 courses listed

See page 45 for additional information

Biotechnology



PROGRAM DESCRIPTION

There are two Biotechnology programs: the **Advanced Biotechnology Certificate (ABC)**, for applicants who hold a science degree, and the **Biotechnology Laboratory Technician (BLT)** which is an A.A.S. Both programs are designed to educate students in laboratory skills necessary for employment in various industry laboratories.

PROGRAM ADMISSION REQUIREMENTS

Advanced Biotechnology Certificate:

- Degree in a Science field
- Submit official transcripts
- Submit ABC Program Application
- Schedule interview with the Director of Bioscience

Biotechnology Laboratory Technician A.A.S.:

- Completion of prerequisite courses
- Submit official transcripts
- Submit BLT Program application
- Schedule interview with the Director of Bioscience

Required courses completed prior to acceptance into the program:

- *Biology*
- *Microbiology*
- *Chemistry*
- *Intermediate Algebra or higher*

PROGRAM OUTCOMES

- Demonstrate critical thinking skills and trouble-shooting abilities necessary to manage work in a biotechnology lab.
- Practice successful strategies to work with nucleic acids evidenced by demonstrating the ability to transform bacteria with GFP.
- Possess the ability to maintain mammalian cell lines evidenced by demonstrated ability to resolve contaminated culture issues.
- Possess the knowledge and entry-level skills necessary to obtain recombinant proteins from a biomass.
- Demonstrate the ability to implement safety procedures relating to instrumentation and hazards of biotechnology labs.
- Make scientific presentations in a professional manner.

REAL JOBS available in following areas such as Agriculture, Wheat breeding, Food science, Genetics, Biofuels, Molecular biology, Diagnostics, Pharmaceutical Manufacturing.

FACULTY

Barb Wenger, M.S., M.T. (ASCP)

Director of Biosciences

785.320.4506

barbarawenger@matc.net



Advanced Biotechnology Certificate Curriculum

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. **In short, this program teaches one how to work in a lab. 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.**

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 Course

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

*Online Course

Year 1 Summer Semester

Course #	Course Title	Credit Hours
BIO 280	Biomanufacturing Techniques*	2
BIO 281	Biomanufacturing Techniques Lab	3
BIO 290	Internship	5

*Online Course

Biotechnology Laboratory Technician Curriculum

This Biotechnology Laboratory Technology curriculum prepares students who do not have a science background to acquire and apply scientific principles and technical skills in support of a variety of laboratories in the biotechnology arena. 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 research, health and medical, industrial and environmental, food and agriculture, biodiesel fuels, as well as other emerging industries in the growing field of biotechnology.

A.A.S. Degree Requirements

65 Credits Hours

33 Technical Specialty Credits

5 Technical Electives

27 General Education Credits

Pre-Requisite

18 Credit Hours

Course #	Course Title	Credit Hours
BSC 110	Biology	5
BSC 205	Microbiology	5
CHM 100	Chemistry I	5
MAT 110	Intermediate Algebra or higher	3

Technical Specialty Credits

33 credit hours required

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
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	Bio manufacturing Techniques*	2
BIO 281	Bio manufacturing Techniques Lab	3
BIO 290	Biotechnology Internship	5
EMP 1901	Global Employment Standards	1

*Online Course

Suggested Technical Elective Courses

5 Credit Hours

Course #	Course Title	Credit Hours
BIO 230	Biohazardous Risk Reduction	2
BUS 141	Medical Terminology	3
CIS 116	Database Management	2
CIS 100	Software Applications	3
CRT 100	Principles of Information Assurance	1
CRT 125	PC Hardware	3
ALH 101	Phlebotomy	3
NTR 105	Nutrition	3
WLD 110	Welding Metallurgy	1
MAT 145	Elementary Statistics	3

† Additional Technical Elective options are available; see an advisor.

General Education Requirements

9 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
Additional General Education		6 Required
See pages 12 for General Education Electives		

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 projects within the local area. **This program aligns with the Kansas Board of Regents curriculum.**

PROGRAM ADMISSION REQUIREMENTS

- College Placement Assessment Criteria

PROGRAM OUTCOMES

- Use and operate tools and equipment safely
- Use proper safety practices to prevent accidents
- Gain character and integrity to become a personally responsible employee

FACULTY

Gary Pryor, B.S.

Building Trades Instructor

785.320.4527

garypryor@manhattantech.edu

Laci Heller, B.S.

Building Trades Assistant

785.320.4539

laci heller@manhattantech.edu

Building Trades Curriculum

A.A.S. Degree Requirements

63 Credit Hours

- 36 Technical Specialty Credits
- 12 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.

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

Suggested Technical Electives

12 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	3
BUS 126	Introduction to Business	3
BUS 185	Business Ethics & Human Relations	3
BUS 255	Principles of Management	3
WLD 260	Agricultural Construction	3
DFT 103	Fundamentals of Drafting*	3
DFT 1054	CAD Applications*	4

*Drafting courses highly recommended

† Additional Technical Elective options are available; see an advisor.

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
See pages 12 for General Education Electives		

Management/Entrepreneurship Technical Minor

15 Technical Credit Hours Required

See page 48 for additional information

Certificate Program Requirements

45 Credit Hours

- 36 Technical Specialty Credits
- 3 Drafting 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 OR COM 105	Technical Writing English Composition I	3

*Online class; must be completed in order to enroll in the second semester.

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 or higher	3

Drafting Technology Credits

3 Credit Hours

Course #	Course Title	Credit Hours
DFT 103	Fundamentals of Drafting	3
DFT 1054	CAD Applications	4

AO – K Certificate

18 Credit Hours

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.

Business Administration

PROGRAM DESCRIPTION

The Business Administration program provides students with course options for their chosen career field. Students earning a certificate or AAS degree will enter the workforce ready to meet the needs of the workplace.

Classroom activities and projects simulate actual office situations encountered in today's global workplace. Students complete courses designed to develop critical and creative thinking, computation, communication, lifelong-learning, technical, time-management, problem solving, teamwork, and organizational skills. Students use up-to-date computer hardware and software currently used in business and industry.

The job prospects for administrative support professionals continue to grow because these employees provide a service that is vital to the office operation. According to the Bureau of Labor Statistics, overall employment within Business Administrative support is projected to grow 12 percent from 2012-2022. Employment growth will vary by occupational specialty. For information about specific careers in each area of study, visit the O*Net Online website at <http://www.onetonline.org> for detailed job descriptions, education requirements, wages, and employment trend information.

PROGRAM ADMISSION REQUIREMENTS

- College Placement Assessment Criteria

PROGRAM OPTIONS



Accounting

The Accounting Support focus prepares students for entry-level careers as bookkeepers, payroll clerks, accounting clerks, accounting assistants, and other office support positions. The U.S. Bureau of Labor Statistics projects that employment of bookkeeping, accounting, and auditing clerks will grow 11 percent from 2012 to 2022. As the number of organizations increases and financial regulations become stricter, there will be greater demand for these workers to maintain books and provide accounting services.



Administrative

The Administrative Support focus equips office professionals with the skills necessary to respond to the requirements of today's workplace. Students will complete courses designed to develop proficiency in the use of integrated software, analysis and coordination of office duties and systems, business operations, basic accounting, and other courses specific to an office environment.



Medical Office

Students who pursue the Medical Office Support focus learn skills needed to perform entry-level administrative duties in a medical, clinical, or healthcare facility/system office environment. Courses focus on financial and general medical office duties to develop skills specific to working in a medical office setting.

PROGRAM OUTCOMES

- Prepare and deliver professional presentations
- Exhibit interpersonal skills in a team setting
- Create professional employment documents
- Demonstrate knowledge of operations of a business
- Utilize Internet research methods to obtain credible information
- Utilize industry-specific software to develop professional documents, presentations, workbooks, and databases and to enhance productivity
- Use current and emerging technologies to solve workplace problems through presentation, research, analysis, and synthesis
- Demonstrate knowledge of the ethical frameworks of business
- Identify and correct common communication problems including awareness of diversity issues which affect the workplace
- Exhibit ability to effectively communicate, both through oral and written communications
- Understand and apply principles associated with maintaining good mental and physical health, professionalism in the workplace, work ethic, and personal grooming

FACULTY

Laurie Johnson, M.A.
Business Administration Instructor
785.320.4542
lauriejohnson@manhattantech.edu

Jason York, J.D./M.Acc
Business Administration Instructor
785.320.4529
jasonyork@manhattantech.edu

Accounting Support Curriculum

A.A.S. Degree Requirements

62 Credit Hours

39 Technical Specialty Credits

8 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

39 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, Sp)	3
ACC 140	Managerial Accounting (Sp)	3
ACC 270	Tax Accounting (Fa)	3
BUS 111	Personal Finance (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 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 290	Business Capstone (Fa, Sp)	1
CIS 100	Software Applications (Fa, Sp)	3
CIS 116	Spreadsheet Management (Fa, Sp)	2
CIS 121	Word Processing (Fa, Sp)	2
EMP 1901	Global Employment Standards (Fa, Sp)	1

Suggested Technical Electives

8 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 130	Records Management (Fa, Sp)	3
BUS 141	Medical Terminology (Fa, Sp)	3
BUS 149	Medical Office Operations (Fa)	3
BUS 151	Financial Operations for the Medical Office (Sp)	3
BUS 199	Business Internship (Fa, Sp)	1-3
BUS 210	Workstation Management (Fa)	3
BUS 220	Administrative Procedures (Sp)	3
BUS 255	Principles of Management (Fa, 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

† Additional Technical Elective options are available; see an advisor.

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
See pages 12 for General Education Electives		

Certificate Requirements

33 Credit Hours

30 Technical Specialty Credits

3 General Education Credits

Certificate Course 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, Sp)	3
ACC 140	Managerial Accounting (Sp)	3
ACC 270	Tax Accounting (Fa)	3
BUS 111	Personal Finance (Fa, Sp)	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

Administrative Support Curriculum

A.A.S. Degree Requirements

62 Credit Hours

40 Technical Specialty Credits

7 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

40 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 111	Personal Finance (Fa, Sp)	3
BUS 255	OR Principles of Management (Fa, Sp)	
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 290	Business Capstone (Fa, Sp)	1
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
EMP 1901	Global Employment Standards (Fa,Sp)	1

Suggested 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, Sp)	3
BUS 111	Personal Finance (Fa, Sp)	3
BUS 255	OR Principles of Management (Fa, Sp)	
BUS 141	Medical Terminology (Fa, Sp)	3
BUS 149	Medical Office Operations (Fa)	3
BUS 151	Financial Operations for the Medical Office (Sp)	3
BUS 199	Business Internship (Fa, Sp)	1-3
CIS 150	Web Page Applications (Fa, Sp)	3
CRT 100	Principles of Information Assurance (Fa, Sp)	1

† Additional Technical Elective options are available; see an advisor.

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
See pages 12 for General Education Electives		

Certificate Requirements

33 Credit Hours

30 Technical Specialty Credits

3 General Education Credits

Certificate Course Requirements

33 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 111	Personal Finance (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

Medical Office Support Curriculum

A.A.S. Degree Requirements

62 Credit Hours

39 Technical Specialty Credits

8 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

39 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 111	Personal Finance (Fa, Sp)	3
BUS 255	OR Principles of Management (Fa, Sp)	
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 149	Medical Office Operations (Fa)	3
BUS 151	Financial Operations for the Medical Office (Sp)	3
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 290	Business Capstone (Fa, Sp)	1
CIS 100	Software Applications (Fa, Sp)	3
CIS 121	Word Processing (Fa, Sp)	2
CIS 126	Database Management (Fa, Sp)	2
EMP 1901	Global Employment Standards (Fa, Sp)	1

Suggested 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, Sp)	3
BSC 125	Anatomy and Physiology	5
BUS 111	Personal Finance (Fa, Sp)	3
BUS 255	OR Principles of Management (Fa, Sp)	
BUS 185	Business Ethics & Human Relations (Fa, Sp)	3
BUS 199	Business Internship (Fa, Sp)	1-3
BUS 210	Workstation Management (Fa)	3
BUS 220	Administrative Procedures (Sp)	3
CIS 116	Spreadsheet 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

† Additional Technical Elective options are available; see an advisor.

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
Additional General Education		9 Required
See pages 12 for General Education Electives		

Certificate Requirements

33 Credit Hours

30 Technical Specialty Credits

3 General Education Credits

Technical Specialty Courses

33 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting (Fa, Sp)	3
BUS 111	Personal Finance (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 141	Medical Terminology (Fa, Sp)	3
BUS 149	Medical Office Operations (Fa)	3
BUS 151	Financial Operations for the Medical Office (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

Management/Entrepreneurship Curriculum

This curriculum is designed for non-business majors who want to enhance their earning potential by having the business skills to move into management or own and operate their own business.

Suggested Courses

***15 Credit Hours**

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	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

*Complete 5 of the 6 courses listed

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. Students completing the program fulfill the requirements to progress into multiple B.S. in Dental Hygiene degree completion programs. **This program also aligns with the Kansas Board of Regents curriculum.**

PROGRAM ADMISSION REQUIREMENTS

Criteria updated on an Annual basis: Please refer to the Dental Hygiene Admissions Packet at www.manhattantech.edu for detailed information.

- Successful Completion of prerequisites
 - Chemistry I
 - Anatomy & Physiology
 - Microbiology with Lab
- Appropriate assessment scores
- Official copies of all high school and postsecondary education transcripts
- Submission of an Admissions Portfolio that contains all admission requirements
- Participation in an on-campus evaluation

PHYSICAL & COGNITIVE EXPECTATIONS

- Critical Thinking – Critical thinking ability sufficient for clinical judgment.
- Interpersonal Skills – Interpersonal abilities sufficient to interact with individuals, families, groups, etc., from a variety of social, emotional, cultural and intellectual backgrounds.
- Communication Skills – Communication abilities sufficient for interaction with others in verbal and written forms.
- Mobility – Physical abilities sufficient to move from room to room and maneuver in small spaces.
- Motor Skills – Gross and fine motor abilities sufficient to provide safe and effective care.
- Hearing – Auditory ability sufficient to monitor and assess health needs and communicate with patients and other members of the oral healthcare team.
- Visual – Visual ability sufficient for observation and assessment necessary in dental care.
- Tactile – Tactile ability sufficient for assessment.
- Weight-Bearing – Ability to lift and manipulate/move 45-50 pounds daily.
- Cognitive Abilities – Ability to be oriented to time, place and person; organize responsibilities and decisions

PROGRAM OUTCOMES

The Dental Hygiene program outcomes are consistent with the American Dental Education Association's competencies for entry into the profession of Dental Hygiene. These outcomes are available at:

www.adea.org/about/governance/documents/competencies.pdf

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>.

FACULTY

Kylie Austin, M.S.D.H.

Director of Dental Hygiene

785.320.4562

kylieaustin@manhattantech.edu

Tony Kim, B.S.

Dental Hygiene Instructor

785.320.4514

tonykim@manhattantech.edu

Shawn Oprisiu, B.S.

Dental Hygiene Instructor

785.320.4538

shawnoprisiu@manhattantech.edu

Michael Wangsgaard, D.D.S.

Clinical Dentist

785.320.4551

michaelwangsgaard@manhattantech.edu

Dental Hygiene Curriculum

A.A.S. Degree Requirements

80 Credit Hours

50 Technical Specialty Credits

15 General Education Credits

15 Pre-Requisite Credits

Pre-requisites

15 Credit Hours

Course #	Course Title	Credit Hours
CHM 110	Chemistry I	5
BSC 125	Anatomy and Physiology	5
BSC 205	Microbiology	5

Year 1 Fall Semester

Course #	Course Title	Credit Hours
DHT 102	Head and Neck Anatomy, Embryology, and Histology	4
DHT 1032	Dental Radiography	2
DHT 105	Dental Hygiene Clinic I: Pre-Clinic	5
DHT 109	Preventive Dental Hygiene	2

Year 1 Spring Semester

Course #	Course Title	Credit Hours
DHT 1064	Dental Hygiene Clinic II	4
DHT 108	Periodontics	3
DHT 110	General and Oral Pathology	3
DHT 115	Nutrition and Oral Health	2

Year 2 Fall Semester

Course #	Course Title	Credit Hours
DHT 2056	Dental Hygiene Clinic III	6
DHT 2062	Dental Materials	2
DHT 208	Dental Pain Management	3
DHT 112	Dental Hygiene Externship	1

Year 2 Spring Semester

Course #	Course Title	Credit Hours
DHT 207	Pharmacology	3
DHT 2106	Dental Hygiene Clinic IV	6
DHT 211	Ethics Legal Issues and Kansas Law	2
DHT 2122	Dental Public Health	2

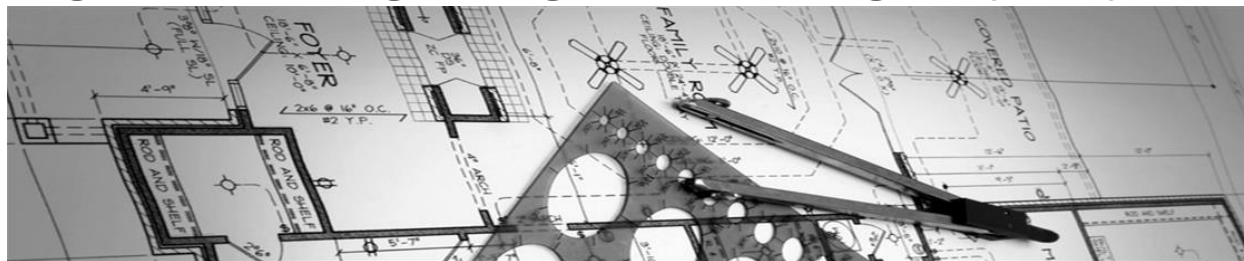
General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
Math		3 Required
MAT 110	College Algebra or higher	3
Additional General Education		9 Required
See page 12 for General Education Electives		

Note: All Dental Hygiene program requirements are listed in the Dental Hygiene Admissions Packet available on the website.

Digital Drafting Design Technologies (3DT)



PROGRAM DESCRIPTION

The Digital Drafting Design Technologies (3DT) program is a two-year degree program that prepares students with the skills required to work in and adapt to a rapidly changing global technical environment. 3DT's graduate technicians translate ideas from design layouts, specifications, rough sketches, and calculations of engineers and architects into working drawings, maps, plans, and illustrations, which are used in making products. They prepare drawings using Computer-Aided Design, BIM and 3D modeling systems. Our students are prepared to work in the mechanical, electrical/electronic, structural, architectural, civil, piping, manufacturing, and technical illustration fields. 3DT's graduate technicians will demonstrate competence via a technical portfolio, third party certification and credentials that will prepare them for success in entry-level, intermediate, and senior positions. 3DT's A.A.S degree program of study is accredited by the American Design Drafting Association (ADDA). 3DT's graduating students are given the ADDA drafting certification test and upon passing are certified by the ADDA for 5 years. Our faculty bring real-world experience into the classroom, with experience from architectural, mechanical, electrical, civil, and MEP industries. **This program also aligns with the Kansas Board of Regents curriculum.**

PROGRAM VISION STATEMENT

The overall vision of the Digital Drafting Design Technologies department is to be recognized by the industries hiring the department's graduates for providing an application driven core curriculum. Through hands-on laboratory based projects, graduates will be recognized by employers as skilled, productive contributors in their field immediately after graduation.

PROGRAM MISSION STATEMENT

The Digital Drafting Design Technologies program's mission is to prepare students with the skills required to meet globally recognized industry standards and to adapt in a rapidly changing technical environment. Students will demonstrate technical competencies for success as design technicians via a technical portfolio and associate degree credentials.

PROGRAM ADMISSION REQUIREMENTS

Prospective students applying for the Digital Drafting Design Technologies program must meet with the department's instructor(s) before entering the program. During this meeting student's goals, preparedness, and course of study will be assessed.

PROGRAM OUTCOMES

Graduates will:

- Demonstrate "soft" skills through team projects, mock interviews, and Capstone presentation.
- Complete a presentation portfolio of skills through the Capstone presentation and ADDA certification testing.
- Demonstrate technical skills through team projects, Capstone presentation, and ADDA certification testing.

FACULTY

Norm Delay, M.S.

Digital Drafting Design Technologies Instructor

785.320.4555

normdelay@manhattantech.edu

Thomas Whistler, M.S.

Digital Drafting Design Technologies Instructor

785.320.4553

thomaswhistler@manhattantech.edu



Digital Drafting Design Technologies Curriculum

A.A.S. Degree Requirements

62 Credit Hours

41 Technical Specialty Credits

6 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

41 Credit Hours		
Course #	Course Title	Credit Hours
DFT 1054	Drafting Fundamentals with CAD	4
DFT 145	Navisworks: BIM, Plan Reading, Scheduling	2
DFT 152	Revit Design Suite	3
DFT 160	Advanced CAD Applications	3
DFT 165	MicroStation I	3
DFT 170	Structural Drafting: Steel	3
DFT 219	Revit Architectural Drafting	4
DFT 230	Machine Drafting I : Details	3
DFT 235	Machine Drafting II: Assemblies	3
DFT 266	MicroStation II	2
DFT 271	Mechanical Drafting: Revit MEP	3
DFT 280	Civil Drafting & Civil 3D	3
DFT 290	CAD Capstone	4
EMP 1901	Global Employment Standards	1

Suggested Technical Electives

6 Credit Hours

Course #	Course Title	Credit Hours
DFT 103	Fundamentals of Drafting*	3
DFT 260	Physical and Computer-Aided 3D Modeling	3
BUS 111	Personal Finance	3
BUS 126	Introduction to Business	3
BUS 255	Principles of Management	3
WLD 140	SMAW	3
WLD 150	GMAW	3

* Additional Technical Elective options are available; see an advisor.

General Education Requirements

15 Credit Hours

Course #	Course Title	Credit Hours
Communications		3 Required
COM 105	English Composition I or higher	3
COM 110	Technical Writing	3
Math		3 Required
MAT 110	Intermediate Algebra or higher	3
MAT 109	Technical Mathematics II	3
Additional General Education		9 Required
See page 12 for General Education Electives		

Certificate Program Requirements

32 Credit Hours

29 Technical Specialty Credits

3 General Education Credits

Technical Specialty Courses

32 Credit Hours		
Course #	Course Title	Credit Hours
DFT 103	Fundamentals of Drafting*	3
DFT 1054	Drafting Fundamentals with CAD	4
DFT 145	Navisworks: BIM, Plan Reading, Scheduling	2
DFT 152	Revit Design Suite	3
DFT 160	Advanced CAD Applications	3
DFT 165	MicroStation I	3
DFT 170	Structural Drafting: Steel	3
DFT 219	Revit Architectural Drafting	4
DFT 230	Machine Drafting I : Details	3
COM 110	Technical Writing OR	3
MAT 101	Technical Math I	
EMP 1901	Global Employment Standards	1

* 3DT students must have articulated CAD courses from their high school for DFT 103 Fundamentals of Drafting, CAD experience, or get permission from the department to start the program. Those students that do not have any CAD background will be required to take DFT 103 Fundamentals of Drafting and pass the course with a "C" or better. This course can be taken concurrently with first semester CAD courses.

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. **This program also aligns with the Kansas Board of Regents curriculum.**

PROGRAM OUTCOMES

- Develop the necessary skills to gain entry-level employment in the electrical field
- Develop industry-wide safe work practices per American Public Power guidelines
- Effectively communicate both verbally and in writing
- Develop the mathematical skills necessary to calculate electrical loads, weights, and measures

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 with manual endorsement
- College Placement Assessment Criteria

FACULTY

Rex Fair, Journeyman Lineman
Electric Power & Distribution Instructor
785.320.4556
resfair@matc.net

Justin Meuli, Journeyman Lineman, A.A.S
Electric Power & Distribution Instructor
785.320.4510
justinmeuli@matc.net

Electric Power and Distribution Curriculum

A.A.S Degree Requirements

63 Credit Hours

48 Technical Specialty Credits

15 General Education Credits

Year 1 Spring Semester

Course #	Course Title	Credit Hours
EPD 101	OSHA 10*	1
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 137	Basic Transformer Theory and Transformer Installation	7

*Online class; must be completed in order to enroll in the second semester.

Year 1 Summer Semester

Course #	Course Title	Credit Hours
EPD 199	Utility Internship	8

Year 1 Fall Semester

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
EMP1901	Global Employment Standards	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
See page 12 for General Education Electives		

Certificate Program Requirements

54 Credit Hours

48 Technical Specialty Credits

6 General Education Credits

Year 1 Spring Semester

Course #	Course Title	Credit Hours
EPD 101	OSHA 10*	1
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 137	Basic Transformer Theory and Transformer Installation	7
MAT 101	Technical Math I or higher	3

*Online class; must be completed in order to enroll in the second semester.

Year 1 Summer Semester

Course #	Course Title	Credit Hours
EPD 199	Utility Internship	8

Year 1 Fall Semester

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
EMP 1901	Global Employment Standards	1
COM 110	Technical Writing	3
COM 105	English Composition I	

Facilities Maintenance Technology



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

- College Placement Assessment Criteria

This program is suspended for the 2016-2017 academic year.

Facilities Maintenance Technology

This program is suspended for the 2016-2017 academic year

Curriculum

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
HVA 150	Cooling	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
FMT 201	Material Movement Systems	3

Certificate Program 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 or higher	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
COM 105	OR English Composition I	

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
See page 12 for General Education Electives		

Information & Network Technology

PROGRAM DESCRIPTION

Information and Network Technology is focused on the design, implementation, and configuration of network servers, and their integration into a modern enterprise network. Both hardware and software aspects are covered. The core of the program is designed around the Cisco CCNA curriculum. Specific topics include network analysis, reliability, security, fault tolerance, operating systems, computer and network hardware and asset management. The above skills are brought together and applied with the CCNA curriculum through hands-on configuration and management of enterprise devices. 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. **This program also aligns with the Kansas Board of Regents curriculum.**

PROGRAM REQUIREMENTS

- Students are expected to 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 \$60, must be completed by the applicant. Each instance is reviewed on a case-by-case basis. Further information is provided during new student orientation.

CERTIFICATIONS

Completion of the Information and Network Technology program prepares students to sit for the following certifications:

CompTIA A+

CCNA Security

Microsoft Certified Systems Engineer (MCSE) (partial)

VMware Certified Associate (VCA)

CompTIA Network +

DoD Directive 8570.01

IAT Level II – Security+

Cisco Certified Network Associate (CCNA)

CompTIA Linux +

Microsoft Certified Systems Administrator (MCSA) (partial)

VMware Certified Professional (VCP)

CompTIA Security+

IAT Level I – A+, Network+

IAM Level I – Security+

ARTICULATIONS

Pittsburg State University

Washburn University

KSU-Salina

Fort Hays State University

PROGRAM OUTCOMES

- Design, implement, and maintain small and medium business networks.
- Install, configure, and manage a virtualized computer infrastructure.
- Deploy, configure, and manage a physical computer infrastructure.
- Utilize a command line environment to perform and automate tasks.
- Display the ability to troubleshoot complex computer hardware, operating system, and network system problems.
- Demonstrate the interpersonal skills needed for working successfully in a service-oriented profession.
- Work productively as a member of a team.
- Demonstrate the ability to make technology solution recommendations while considering fiscal ramifications.
- Demonstrate the ability to create appropriate and thorough technical documentation.
- Demonstrate research and verbal presentation skills.
- Demonstrate how to avoid various malware and cyberattack pitfalls.
- Responsibly utilize the Internet, PCs, smart phones, and other internet-enabled devices.
- Demonstrate how to secure and manage IT assets and digital data in storage and transit, including the use of physical security.
- Install, configure, and maintain enterprise server level applications.

FACULTY

Bill Gilligan, CCNA, A.A.S.

Information & Network Technology Instructor

785.320.4520

billgilligan@matc.net

Jeffrey Anderson, A.A.S.

Information & Network Technology Instructor

785.320.4508

jeffrevanderson@matc.net



Information & Network Technology Curriculum

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 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**	Introduction to Networks (Fa, Sp)	3
CRT 175**	Routing and Switching Essentials (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 (Cisco 3,4) (Fa, Sp)	3
CRT 289	Information Systems Security (Fa, Sp)	3
CRT 295	INT Capstone (Fa, Sp)	3
EMP 1901	Global Employment Standards	1
*	Maps to A+ Certification	
**	Maps to Cisco CCNA Certification	
***	Maps to Linux + Certification	
****	Maps to Security + Certification and CCNA Security	

Suggested 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

‡ Additional Technical Elective options are available; see an advisor.

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
See page 12 for General Education Electives		

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. **This program aligns with the Kansas Board of Regents Curriculum**

PROGRAM ADMISSION REQUIREMENTS

- Complete all prerequisite coursework
 - Anatomy and Physiology
 - Microbiology
 - Chemistry I
 - English Composition I
 - Public Speaking
 - Intermediate Algebra or higher
- Submit official transcript(s) to MATC
- Turn in Medical Laboratory Technology Program Application and Essential Functions Form
- Schedule an interview with the MATC MLT Program Coordinator
- Complete background check
- Provide proof of immunizations

NOTE: MLT 1213 and ALH 101 may be taken prior to admission to the program.

BUREAU OF LABOR STATISTICS

Medical laboratory technicians collect samples and perform tests to analyze body fluids, tissue, and other substances. Medical laboratory technicians usually work under the general supervision of medical laboratory technologists or laboratory managers.

Medical laboratory technicians held about 163,400 jobs in 2014.

Employment of medical laboratory technicians is projected to grow 18 percent from 2014 to 2024, much faster than the average for all occupations.

Job prospects will be best for medical and clinical laboratory technologists and technicians who complete an accredited education program and earn professional certification.

The median annual wage for medical laboratory technicians was \$38,370 in May 2014. The highest 10 percent earned more than \$59,750.

Accreditation

The Medical Laboratory Technician program is accredited by: National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) 5600 N. River Road, Suite 72 Rosemont, IL 60018 773.714.8880

FACULTY

Marcella Fickbohm, M.S., M.T.(ASCP)

MLT Coordinator/Instructor

785.320.4546

marceyfickbohm@manhattantech.edu

Medical Laboratory Technology Curriculum

A.A.S. Degree Requirements

68 Credit Hours

44 Technical Specialty Credits

24 Pre-Requisite Credits

Pre-requisites

24 Credit Hours

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

1st Semester

Course #	Course Title	Credit Hours
MLT 1213	Introduction to the Laboratory for MLT *	3
MLT 2216	MLT Hematology/Coagulation *	6
MLT 2416	MLT Clinical Chemistry *	6
MLT 2503	MLT Immunology*	3

2nd Semester

Course #	Course Title	Credit Hours
MLT 2303	MLT Urinalysis & Body Fluids*	3
MLT 2706	MLT Pathogenic Microbiology*	6
MLT 2806	MLT Immunohematology*	6
ALH 101	Phlebotomy	3

3rd Semester

Course #	Course Title	Credit Hours
MLT 2988	Clinical Internship I for MLT*	8

*Consists of an online lecture portion and face-to-face laboratory portion

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.**

PROGRAM ADMISSION REQUIREMENTS

Criteria updated on an Annual basis: Please refer to the Associate Degree Nursing Admissions Packet at www.manhattantech.edu for detailed information.

- Successful Completion of prerequisites
 - Anatomy & Physiology
 - Microbiology with Lab
 - English Composition I
 - Public Speaking
 - Intermediate Algebra
 - Nutrition
 - General Psychology
 - Human Growth & Development
 - Appropriate assessment scores
 - Official copies of all high school and postsecondary education transcripts
 - Submission of an Admissions Portfolio that contains all admission requirements
 - A maximum of 10 credit hours from a PN certificate program will be transcribed to meet the A.A.S. degree requirement.

ADDITIONAL INFORMATION

- A Window's-based device is required for the program.

PROGRAM OUTCOMES

- Integrate caring behaviors in practicing the art and science of nursing within a diverse population.
- Implement professional standards and scope of practice within legal, ethical, and regulatory frame works.
- Collaborate with clients and members of the inter-professional health care team to optimize client outcomes.
- Formulate safe and effective clinical judgements guided by the nursing process, clinical reasoning, and evidence-based practice.
- Manage care and provide leadership to meet client needs using available resources and current technology.
- Generate teaching and learning processes to promote and maintain health and reduce risks for a global population.
- Demonstrate effective communication methods to manage client needs and to interact with other health care team members.
- Seek learning opportunities to promote career development and continuing competence.

ACCREDITATION



Kansas State Board of Nursing
900 SW Jackson, Suite 1051
Topeka, KS 66612



Accreditation Commission for Education in Nursing
3343 Peachtree Rd NE, Suite 850
Atlanta, GA 30326
404.975.5020

FACULTY

Rebecca Claus, M.S.N., RN
Director of Nursing & Allied Health
785.320.4507
rebeccaclaus@manhattantech.edu

Ken Sisley, M.S.N., RN
Nursing Instructor
785.320.4509
kennethsisley@manhattantech.edu

Dorothy Ascher, M.S.N.®, PhD, RN
Nursing Instructor
785.320.4523
dorothyascher@manhattantech.edu

Laurie Stegeman, M.S.N., RN
Nursing Instructor
785.320.4543
lauriestegeman@manhattantech.edu

Kim Davis, M.S.N., RN
Nursing Instructor
785.320.4537
kimberlydavis@manhattantech.edu

Nursing – Associate Degree Curriculum

A.A.S Degree Requirements

62 Credit Hours

24 Technical Specialty Credits

28 Pre-Requisite Credits

10 Practical Nursing Credits

Pre-requisites (2.5 cumulative GPA required)

28 Credit Hours

Course #	Course Title	Credit Hours
BSC 125	Anatomy and Physiology	5
BSC 205	Microbiology	5
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
	Practical Nursing Credit Hours	10

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

NOTE: All ADN program requirements are listed in the Associate Degree Nursing Admissions Packet available on the website.

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.**

PROGRAM ADMISSION REQUIREMENTS

Criteria updated on an Annual basis: Please refer to the Practical Nursing Admissions Packet at www.manhattantech.edu for detailed information.

- Successful Completion of prerequisites
 - Anatomy & Physiology
 - Intermediate Algebra
 - Nutrition
 - Human Growth & Development
 - Certified Nursing Assistant License (CNA)
 - Appropriate assessment scores
 - Official copies of all high school and postsecondary education transcripts
 - Submission of an Admissions Portfolio that contains all admission requirements

PHYSICAL AND COGNITIVE EXPECTATIONS

The program of study in MATC nursing programs includes both classroom and clinical instruction. Nursing students must be able to perform activities that are comparable to those required for employment. Please review the following statements, evaluating your ability to perform these nursing activities:

- Lifting and/or carrying moderately heavy objects. It is common to be expected to lift or carry more than 25 pounds during each clinical day.
- Performing duties that regularly involve twisting the spine or extending the body while caring for patients.
- Assisting patients of all weights and sizes to change position.
- Standing or walking 8-12 hours a day with occasional stooping, crouching or kneeling.
- Coordinating eyes and hands or fingers rapidly and accurately in making precise movements; moving fingers to manipulate small objects such as syringes and medical equipment.
- Communicating effectively and efficiently with patients as well with members of the health care team.
- Visual acuity to read, to determine changes in patient condition, to discriminate between measurements on equipment such as syringes or gauges, and to accurately use patient care supplies and equipment.
- Hearing as appropriate for communication and for collection of information about patient condition.
- Interpreting a variety of instructions without assistance: written, oral, diagram or schedule formats.
- Physically responding to emergency patient calls, such as initiating CPR on a patient who has experienced a cardiac arrest.

PROGRAM OUTCOMES

- Provide nursing care within the scope of the ethical and legal responsibilities of practical nursing.
- Utilize the nursing process to identify basic needs of the client throughout the lifespan for health promotion and maintenance, or when biological, spiritual, cultural and psychosocial needs are not being met.
- Provide safe and skillful therapeutic care in simple nursing situations based on knowledge of biological, cultural, spiritual, and psychosocial needs of the client throughout the lifespan.

- Demonstrate effective interpersonal relationships with the client, the client's family, and members of the interdisciplinary health care team.
- Demonstrate responsibilities of the practical nurse as an individual who collaborates within the healthcare system and the community

ACCREDITATION

The Practical Nursing Program is approved by: Kansas State Board of Nursing 900 SW Jackson, Suite 1051, Topeka, KS, 66612

FACULTY

Rebecca Claus, M.S.N., RN
Director of Nursing & Allied Health
785.320.4507
rebeccaclaus@manhattantech.edu

Brenda Krahling, M.S.N.®, RN
Nursing Instructor
785.320.4533
brendakrahling@manhattantech.edu

Cindy Barnes, B.S.N., M.S., RN
Nursing Instructor
785.320.4515
cindybarnes@manhattantech.edu

Kate McNeal, B.S.N., RN
Nursing Instructor
785.320.4535
katemcneal@manhattantech.edu

Nursing - Practical Curriculum

Certificate Program Requirements

46 Credit Hours

32 Technical Specialty Credits

14 Pre-Requisite Credits

Pre-requisites (must be completed with a C or higher)

14 Credit Hours

Course #	Course Title	Credit Hours
BSC 125	Anatomy and Physiology	5
MAT 110	Intermediate Algebra	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

NOTE: All PN program requirements are listed in the Practical Nursing Admissions Packet available on the website.

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

- College placement assessment criteria

PROGRAM OUTCOMES

- Demonstrate the skill and knowledge to pass an all-position weld tests on plate to AWS D.1.1 code.
- Use current guidelines and safety precautions in all welding laboratory activities
- Demonstrate the ability to follow safety procedures and demonstrate ethical work habits consistent with industry standards
- Apply appropriate safe work habits when operating oxy-fuel and arc-based welding equipment.
- Apply welding shop safety procedures in an industrial setting
- Contribute to achieving team goals
- Apply communication skills in an industrial setting
- Use terminology associated with welding to communicate effectively with co-workers, supervisors, customers, inspectors, engineers and vendors
- Demonstrate production-welding skills consistent with industry standards
- Read blueprints, layout, and fabricate a weld to industry standards
- Demonstrate the ability to reason and be creative
- Demonstrate the ability to problem solve and think critically.

FACULTY

Christopher Nichols, B.S., CWI/CWE
Welding Instructor
785.320.4566
christophernichols@manhattantech.edu

Benjamin O'Leary
Welding Instructor
785.320.4566
benjaminoleary@manhattantehc.edu

Welding Technology Curriculum

A.A.S Degree Requirements

62 Credit Hours

33 Technical Specialty Credits

14 Technical Elective Credits

15 General Education Credits

Technical Specialty Courses

33 Credit Hours

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10 *	2
WLD 110	Welding Metallurgy	1
WLD 115	Blueprint Reading	2
WLD 1303	Cutting Processes	3
WLD 140	SMAW	3
WLD 145	SMAW 2	4
WLD 150	GMAW	3
WLD 155	GMAW 2	4
WLD 160	Flux Cored Arc Welding	2
WLD 171	GTAW	3
WLD 1763	GTAW 2	3
WLD 190	Welding Project Management OR	2
WLD 199	Occupational Work Experience	
EMP 1901	Global Employment Standards	1

*Online class; must be completed in order to enroll in the second semester.

Suggested Technical Electives

14 Credit Hours

Course #	Course Title	Credit Hours
ACC 100	Business Accounting	3
BUS 111	Personal Finance	3
BUS 126	Introduction to Business	3
BUS 185	Business Ethics & Human Relations	3
BUS 255	Principles of Management	3
DFT 103	Fundamentals of Drafting	3

‡ Additional Technical Elective options are available; see an advisor.

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
See page 12 for General Education Electives		

Certificate Program Requirements

39 Credit Hours

33 Technical Specialty Credits

6 General Education Credits

Technical Specialty Courses

39 Credit Hours

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10 *	2
WLD 110	Welding Metallurgy	1
WLD 115	Blueprint Reading	2
WLD 1303	Cutting Processes	3
WLD 140	SMAW	3
WLD 145	SMAW 2	4
WLD 150	GMAW	3
WLD 155	GMAW 2	4
WLD 160	Flux Cored Arc Welding	2
WLD 171	GTAW	3
WLD 1763	GTAW 2	3
WLD 190	Welding Project Management OR	2
WLD 199	Occupational Work Experience	
EMP 1901	Global Employment Standards	1
COM 110	Technical Writing OR	3
COM 105	English Composition I or higher	
MAT 101	Technical Mathematics I or higher	3

*Online class; must be completed in order to enroll in the second semester

AO – K Certificate

17 Credit Hours

Course #	Course Title	Credit Hours
WLD 100	Welding Safety/OSHA 10 *	2
WLD 110	Welding Metallurgy	1
WLD 115	Blueprint Reading	2
WLD 140	SMAW	3
WLD 150	GMAW	3
WLD 171	GTAW	3
MAT 101	Technical Mathematics I or higher	3

COURSE DESCRIPTIONS

± 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, Sp) 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, Sp) 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.

± 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 bonding 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 repair 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 SCH
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.
- 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.
- ¶ ALH 1202 Phlebotomy Clinical 2 SCH
 Prerequisite: ALH 101. This internship allows students to gain real job experience as a phlebotomist and complete requirements for American Society of Clinical Pathology Certification. The student will be placed at a regional hospital or clinic which agrees to provide supervisor and experience opportunities.
- ¶ AMT 109 Intro to Automotive Technology 2 SCH
 Prerequisite: None. This course is an introduction to automotive technology as it relates to safety, tools, and history. Topics covered include safety and pollution training, proper tool usage, lift safety, chemical safety, decoding VIN numbers, brief history of the automobile, and using service information.
- ¶ 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 149 Suspension & Steering 1 3 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 Suspension & Steering 2 2 SCH
 Prerequisite(s): Complete AMT149 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.
- † 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 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 understand safety in the laboratory, including the secure use and handling of biological and chemical materials. Topics covered will include safety procedures in Biosafety Level 2 labs, safety with infectious disease, safe handling of hazardous biological and chemical materials, and discussion of safe handling of radiological materials and safe practices with small animals in laboratory settings.
- ‡ BIO 226 Laboratory Safety Lab 1 SCH
Prerequisite: None; Co-requisite: BIO225. This course will enable the student to develop what is known in industry as GLP or defined Good Laboratory Practice. This will include the secure use and handling of biological and chemical and radiological materials in a laboratory setting. Topics covered will include safety procedures in Biosafety Level 2 labs, safety with infectious disease, safe handling of hazardous biological and chemical materials and safe practices with small animals in a laboratory setting.
- BIO 230 Biohazardous Risk Reduction 2 SCH
Prerequisite(s): Permission of the Director of Bioscience. Theory and practice of Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP) in the context of biosafety ideally practiced in all containment laboratories. The information presented is consistent with Center for Disease Control (CDC) and the National Institute of Health (NIH) guidelines.
- ‡ 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. The intent of this course is to offer an environment where the development of skills necessary for laboratory work can be made. BIO251 is to be taken concurrently with BIO250 which introduces the basic skills and knowledge necessary to work in a biological or chemical laboratory. Strong emphasis is placed on developing competency in 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; BIO225/226 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 225/226 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 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; BIO225/226 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; BIO225/226 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.

BSC 110 Biology (Fa, Sp) 5 SCH
KRSN BIO1010

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
KRSN BIO2020

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. 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 205 Microbiology (Fa, Sp) 5 SCH

Prerequisite: 5 credit Biology course within five years with a grade of C or higher, or 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.

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

Prerequisite: None. This course covers the tools and materials required for Building Trades. Students will be introduced to wood and lumber, engineered lumber products, fasteners, hand tools, portable power tools and, stationary power tools. Students will be instructed of the nature, characteristics, and application of the materials used in the construction industry. The course also identifies the importance of accurately reading blueprints and integrates current building codes and zoning ordinances in building construction. Students are instructed in building layout and use of a variety of measuring, leveling, and layout tools.

‡ BTR 106 Introductory Craft Skills (Fa) 3 SCH

Prerequisite: None. This course covers the tools and materials required for Building Trades. Students will be introduced to wood and lumber, engineered lumber products, fasteners, hand tools, portable power tools, and stationary power tools. Students will begin to learn to safely operate hand and power tools. Students will be instructed on the nature and the characteristics and application of the materials used in the construction industry. The course also identifies the importance of accurately reading blueprints and integrates current building codes and zoning ordinances in building construction. Students are instructed in building layout and use of a variety of measuring, leveling, and layout tools.

- ₪ BTR 116 Carpentry Basics (Fa) 4 SCH
 Prerequisite: None. 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: None. 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: None. 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: None. 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: BTR 102, 106, 116, 121, 131, and 136 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: BTR 102, 106, 116, 121, 131, and 136 with a grade of C or higher. This course presents topics by instruction, application, and practice as used in Building Trades. Classroom lecture and demonstrations will precede the applications used in the building project. Students will cut, apply adhesives, hang, tape, finish, and texture drywall. Students will be instructed in various uses and ratings of insulation and will evaluate the application of insulation by a local contractor. Students will determine the requirements of proper ventilation for residential construction and will apply ventilation necessary for the building project.
- ₪ BTR 160 Interior Finish Carpentry (Sp) 5 SCH
 Prerequisite: BTR 102, 106, 116, 121, 131, and 136 with a grade of C or higher. This course presents instruction, application, and practice in interior finish carpentry including hanging doors, installing suspended ceilings, and installing baseboards/casing/molding used for residential construction.
- ₪ BTR 171 Painting, Finishing & Decorating (Sp) 5 SCH
 Prerequisite: BTR 102, 106, 116, 121, 131, and 136 with a grade of C or higher. This course covers the techniques required to finish the interior and exterior of a project. Topics covered include caulk, oil and latex paint, sanding, staining, filling, lacquers, and other materials used for finishing.
- ₪ 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.
- BUS 111 Personal Finance (Fa, Sp) 3 SCH
 KRSN BUS1010
 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. This course covers the role of communication in the business environment and focuses on the most effective methods for creating, sending, and receiving messages. This involves the use of effective oral and written communication skills and writing and evaluating business documents using the principles of correct style, organization, and format.
- † **BUS 126 Introduction to Business** (Fa, Sp) 3 SCH
Prerequisite: None. This course is a foundation course on business and its importance in a free market economy and includes a 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 149 Medical Office Operations** (Fa) 3 SCH
Prerequisite: CIS100 with a grade of C or higher. This course is designed to teach students medical office procedures, which may include appointment scheduling, medical records creation and maintenance, written and oral communications, and computer usage in the medical office. Other topics include the medical practice setting, career opportunities, and medical ethics.
- † **BUS 151 Financial Operations for the Medical Office** (Sp) 3 SCH
Prerequisite: CIS100 with a grade of C or higher. This course is designed to teach students skills needed for employment in a medical office. Topics covered include banking, fees and credit collection, health insurance claims, employment opportunities, and future career trends.
- 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** (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, Sp) 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 290 Business Capstone 1 SCH

Prerequisite: EMP 1901, or concurrent. This course is designed for student reflection of workplace skills relevant to a student's chosen area of study. Student evaluation of the skills used and enhanced through the completion of course projects will be presented through the development of a professional portfolio used for their personal marketing. The portfolio is comprised of a letter of introduction, resume, and samples of student work. Course topics also include work ethic, attitude, and communication skills. These topics are presented through in-class exercises, guest speakers, and business tours. End-of-program certification is earned through a third-party certification program: Office Proficiency Assessment Certification (OPAC).

CHM 100 Physical Science (Fa) 4 SCH

KRSN PSI1010

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. 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.

CHM 110 Chemistry I (Fa, Sp) 5 SCH

KRSN CHM1010

Prerequisite(s): Secondary or Post-Secondary 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.

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

KRSN CSC1010

Prerequisite: Demonstrated ability to keyboard 20wpm. 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 (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.
- COM 100 Workplace Writing (Fa, Sp) 3 SCH
Prerequisite: Meet placement guidelines. 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
KRSN ENG1010
Prerequisite(s): Meet placement guidelines. 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
KRSN ENG1020
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): Meet placement guidelines. 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
KRSN COM1010
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.
- ¶ 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 115 INT 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 (Fa, Sp) 1 SCH
Using the Command Shell
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 Introduction to Networks (Fa, Sp) 3 SCH

Prerequisite: None. This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. This is one of four courses required for CNSS 4011 certification (CRT120, CRT125, CRT181).

‡ CRT 175 Routing and Switching Essentials (Fa, Sp) 3 SCH

Prerequisite: CRT170 with a grade of C or higher. This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

‡ 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.

CRT190 ITIL Foundations 2 SCH

Prerequisite: A background in IT and a basic knowledge of Service Management concepts. Information Technology Infrastructure Library, or ITIL, is a process IT staff use to help organizations identify areas for improvement while providing vendor-neutral guidelines on where to make specific changes to reduce costs and increase productivity. This course will assist you in acquiring the essential skills and information necessary to lead and manage an IT business service through every stage of its lifecycle.

‡ 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 (Fa, Sp) 3 SCH
Implementation and Support
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 routers in larger and more complex networks and to develop an understanding of various WAN technologies on a complex network. 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.
- ‡ DFT 103 Fundamentals of Drafting (Fa, Sp) 3 SCH
Prerequisites: Articulated credit from high school, or students with CAD experience by instructor permission, or taken concurrently with first semester coursework. 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.
- ‡ DFT 1054 CAD Applications (Fa, Sp) 4 SCH
Prerequisites: DFT 103 with a grade of C or higher. 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.
- ‡ DFT 145 Navisworks: BIM, Plan Reading, and Scheduling (Fa, Sp) 2 SCH
Prerequisites: None. This course includes concepts and principals covering critical path scheduling, plan reading, durations, logic, resource leveling, and the calculation of costs. Also included is an introduction to project planning with emphasis on legal aspects of various types of corporations and structure; estimating, cash flows; equipment ownership with specific emphasis on labor, related costs, and agreements. Cost control, materials management, and safety related topics will be presented.
- ‡ DFT 152 Revit Design Suite (Fa, Sp) 3 SCH
Prerequisite: None (CAD experience advisable). The Revit Design Suite course enables the student to create/draw a residential/commercial building and section views, place mechanical equipment and plumbing items using Revit Architecture software. The instruction includes walls, roofs, placing doors/windows, stairs/ramps, mechanical systems, electrical systems, and creating schedules.

- ‡ DFT 160 Advanced CAD Applications (Fa, Sp) 3 SCH
Prerequisite: DFT1054 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, and 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: DFT1054 with a grade of C or higher (or concurrent enrollment) or by permission of instructor. 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: DFT1054 with a grade of C or higher, or by permission of instructor. Structural Steel Detailing is an instructional area within the framework of Architectural Drawing. Structural Steel Detailing includes the framework drawings required for light commercial and residential buildings plus the framework drawings for larger buildings and construction. American Institute of Steel Construction standards will be followed. Welding processes and fabrication of materials will be included in the course. CAD drawings are required to complete the assignments. This course will use Design Data's SDS/2 Steel Detailing software
- ‡ DFT 219 Revit Architectural Drafting (Fa, Sp) 4 SCH
Prerequisite: DFT152 with a grade of C or higher, or by permission of instructor. This hands-on, lab-based course introduces the student to the use of Building Information Modeling (BIM) techniques to create digital models of buildings. The objective of the DFT 219 Revit Architecture is to enable students to create full 3D architectural project models, both Commercial and Residential, and set them up in working drawings. The training focuses on basic tools that the student needs to work with the Autodesk Revit software. This course prepares the student for an entry-level position with an engineering firm or engineering consulting firm.
- ‡ DFT 230 Machine Drafting I: Details (Fa, Sp) 3 SCH
Prerequisite: DFT1054 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: DFT1054, 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 260 Physical & Computer-Aided 3D Modeling (Fa,Sp) 3 SCH
Prerequisite: None (CAD experience advisable). This course explores 3D modeling, the application of realistic textures, lighting principles, and techniques for the use of camera types. An emphasis is placed on industry trends and issues pertaining to rendering output for different mediums.
- ‡ 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 271 Mechanical Drafting: Revit MEP (Fa,Sp) 3 SCH
Prerequisite: DFT152 with a grade of C or higher, or by permission of instructor. 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 280 Civil Drafting & Civil 3D (Fa,Sp) 3 SCH
Prerequisites: DFT160 with a grade of C or higher, or by permission of instructor. This course provides an introduction to civil drafting and design using surveying and engineering data to draw civil engineering plans. Topics include legal descriptions, plan and profile drawings, topographic mapping, cross-sections, and required calculations.

‡ DFT 290 CAD Capstone (Fa,Sp) 4 SCH

Prerequisite: All Core Program Courses. The incorporation of the theory and practical development, planning, management, and presentation of a drafting project from start to finish. Topics include techniques of project planning, project design and execution, documentation and presentation. Students are required to apply project management techniques to a Capstone Project.

DHT 102 Head and Neck Anatomy, Embryology, and Histology (Fa) 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 1032 Dental Radiography (Fa) 2 SCH

Prerequisite: Acceptance into the Dental Hygiene program and proof of current American Heart Association CPR certification. This course prepares the dental hygiene student to expose, process, and critique intra and extraoral radiographs for clinical practice. Emphasis is placed on technique and individual patient radiographic need using standardized ALARA concepts. Students process, mount, and evaluate radiographs for diagnostic value associated with patient care. Radiation production, biology, and safety are required for students to make informed decisions and adjustments for optimum patient care.

‡ DHT 105 Dental Hygiene Clinic I: Pre-Clinic (Fa) 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 1064 Dental Hygiene Clinic II (Sp) 4 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 Periodontics (Sp) 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 (Fa) 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 General and Oral Pathology (Sp) 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 is 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 (Fa) 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 (Sp) 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 2056 Dental Hygiene Clinic III (Fa) 6 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 2062 Dental Materials (Fa) 2 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. This course is designed to provide students with a knowledge base of the science and physical properties of dental materials. Through laboratory exercises, students will have hands-on experience with dental materials used in dental hygiene and dentistry while applying their knowledge of dental material sciences.
- † DHT 207 Pharmacology (Sp) 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 (Fa) 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 2106 Dental Hygiene Clinic IV (Sp) 6 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 (Sp) 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 2122 Dental Public Health (Sp) 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. 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.
- EMP 1901 Global Employment Standards (Fa, Sp) 1 SCH
This course will prepare students for success in the workplace through the study of effective job-seeking skills and professional workplace behavior. Discussion of personal, educational, and professional career goals, as well as a wide-range of personnel matters, will also be included.

- ‡ EPD 101 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.
- ‡ EPD 105 Climbing Skills (Sp) 4 SCH
Prerequisite: 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 SCH
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 137 Transformer Theory and Installation (Sp) 7 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 transformer. Experience in installation and connection of single transformers and various three-phase transformer banks 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. 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 (Fa) 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 199 Utility Internship (Su) 8 SCH
Prerequisite(s): Must have a grade of C or higher in EPD105, 110, 120, 125, 130, and 135, 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.
- 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 conveyor 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.
- ‡ HVA 103 Safety Orientation/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 1044 HVAC Fundamentals (Fa) 4 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 1104 Electrical Fundamentals (Fa) 4 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: HVA1044. 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: HVA1044. 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 System Fundamentals (Fa) 3 SCH
Prerequisite: None. 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): HVA1044, HVA1104, 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): HVA1044 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): HVA1044 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

This course will prepare students for success in the workplace through the study of effective job-seeking skills and professional workplace behavior. Discussion of personal, educational, and professional career goals, as well as a wide-range of personnel matters, will also be included.

± HVA 199 Occupational Work Experience (Sp) 2 SCH

Prerequisite(s): HVA180; faculty recommendation. Supervised work experience in the public and private sector.

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): Meet placement guidelines. 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): Meet placement guidelines. 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: Meet placement guidelines. 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): Meet placement guidelines. 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): Meet placement guidelines. 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
KRSN MAT1010

Prerequisite(s): Meet placement guidelines. 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
KRSN MAT 1020

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.

‡ MLT 1213 Introduction to the Laboratory for MLT 3 SCH

Prerequisite: None. This course covers organization of the medical laboratory, educational requirements of laboratory scientist and their duties, and 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 2216 MLT Hematology/Coagulation 6 SCH

Prerequisite(s): Admission to the MLT program or instructor approval. 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. Students will learn the theory and skills required to perform medical laboratory testing in Hematology and Coagulation.

‡ MLT 2303 MLT Urinalysis & Body Fluids 3 SCH

Prerequisite(s): Admission to the MLT program or instructor approval. This course will provide the student with in-depth knowledge of the function of the kidney, urine formation, and the procedures utilized in performing a routine urinalysis and body fluid analysis. Correlation of abnormal findings and disease states will be discussed. Other body fluids included in this course are feces, seminal, amniotic, cerebrospinal, pleural, pericardial, and peritoneal. Discrimination between normal and abnormal findings and correlation of this knowledge to disease states will be included in the course material.

MLT 2416 MLT Clinical Chemistry 6 SCH

Prerequisite(s): Admission to the MLT program or instructor approval. This course will cover the physiology of the body and the biochemical reactions that are necessary for a healthy existence. The human condition is evaluated by biochemical shifts in different systems that maintain homeostasis during healthful periods. Basic interpretations of biochemistry and the concentration of enzymes, carbohydrates, lipids, proteins, electrolytes, blood gases, and therapeutic drug monitoring will be discussed. The student will perform routine clinical tests on biological fluids, maintain quality assurance records, and perform preventative maintenance on instrumentation.

‡ MLT 2503 MLT Immunology 3 SCH

Prerequisite(s): Admission to the MLT program or instructor approval. This course presents the theory, practice, and clinical applications in the fields of immunology and serology. The student will perform routine serological tests and apply them to disease processes.

MLT 2706 MLT Pathogenic Microbiology 6 SCH

Prerequisite(s): Admission to the MLT program or instructor approval. 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 pathogenic bacteria will be identified by morphology, staining characteristics, growth on selective media, biochemical testing and serological methods. Basic theory in 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 2806 MLT Immunohematology 6 SCH
Prerequisite(s): Admission to the MLT program or instructor approval. A study of the immunology of blood, including those principles and practices that are known collectively as blood banking. An overview of blood component collection and component preparation is presented. Basic concepts of genetics, immunology and antiglobulin testing are included as a foundation for the understanding of the blood group systems and antibody detection and identification. Current transfusion practices are discussed. The student will gain experience in performance of techniques in immunohematology.
- ‡ MLT 2988 Clinical Internship for MLT 8 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, immune-hematology, microbiology, urinalysis, and serology.
- NTR 105 Nutrition (Fa, Sp) 3 SCH
KRSN HSC 1010
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.
- 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 with a "C" or greater; 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 with a "C" or greater; concurrent enrollment in NUR117. The intent of this course is to provide simulated and actual care situations of selected systems throughout the lifespan, utilizing acute and long-term care settings. An emphasis is placed on integrating critical thinking and clinical decision-making skills, pharmacology, nutrition and nursing process data.
- NUR 133 Personal and Career Orientation 1 SCH
Prerequisite(s): NUR 102 with a grade of 90% or better, NUR 111, NUR117 with a "C" or better, 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): NUR 102, NUR 111, NUR 117, and NUR 118 with a “C” or better. 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): NUR 102, NUR 111, NUR 117, and NUR 118 with a “C” or better. 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): NUR 102, NUR 111, NUR 117, and NUR 118 with a “C” or better, and concurrent enrollment in NUR 138. 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): NUR 102, NUR 111, NUR 117, and NUR 118 with a “C” or better, 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): NUR 134, NUR 136, NUR137, and NUR138 with a “C” or better. This course focuses on the pre- and post-natal maternal nursing care. Emphasis is given to normal reproduction and frequently occurring biological, cultural, spiritual and psychosocial needs of the child-bearing family.

‡ NUR 171 KSPN Maternal Child Nursing Clinical 1 SCH

Prerequisite(s): NUR 134, NUR 136, NUR137, and NUR138 with a “C” or better. The student builds on knowledge and understanding gained in NUR 117 and NUR 137, and continues the development of nursing skills while planning and providing care for the child bearing family. The primary clinical focus is on the nursing care of women and newborns.

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. Emphasis is placed on the transition of the LPN to 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: NUR 201 RN Transition Course with a “C” or better. 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, maternal/child, and medical or surgical problems across the lifespan. Clinical experiences may be gained on the Obstetrical, 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: NUR 201 RN Transition Course with a “C” or better; NUR 220 Nursing Across the Lifespan with a “C” or better. 12 credit hours (8 didactic, 4 clinical). This course focuses on the management of patient care for larger groups. Health promotion and other treatment modalities are explored. Critical thinking is emphasized in the organization, coordination, and delegation of client care. Clinical experience is provided in the care of patients with more acute or complex conditions in areas such as medical, surgical, critical care, emergency room, and perioperative services. Leadership and management issues are explored as they relate to nursing practice.

PSY 100 General Psychology (Fa, Sp) 3 SCH
KRSN PSY1010

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.

PSY 125 Human Growth and Development (Fa, Sp) 3 SCH
KRSN PSY2020

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. 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 100 Introduction to Sociology (Fa, Sp) 3 SCH
KRSN SOC1010

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 explores broad social issues related to marriage and family in contemporary society. Content includes nature of relationships and intimacy; gender roles, communication, love, dating, marriage and its alternatives, sexuality, and parenting, and crisis faced in intimate relationships such as divorce, poverty, and family violence.

WLD 100 Welding Safety/OSHA 10 2 SCH

Prerequisite: None. Through a variety of classroom and/or lab learning and assessment activities, students in this course will explain job/site safety and precautions for job/site hazards; determine the uses of personal protective equipment (PPE); identify the safety equipment and procedures related to safe work practices and environment; identify fire prevention and protection techniques; explore Hazardous Communications (HazCom) including Material Safety Data Sheets (MSDS).

WLD 110 Welding Metallurgy 1 SCH

Prerequisite: WLD100, Welding safety/OSHA 10. Metallurgical principles applied to welding; mechanisms of strengthening, phase equilibria, and microstructure of the weld zone.

WLD 115 Blueprint Reading 2 SCH

Prerequisite: WLD100, Welding safety/OSHA 10. In this course students will be provided exposure to blueprint reading beginning with identification of specific lines, views, abbreviations, symbols, joints and shapes specific to the welding industry. Students will interpret basic 3D sketches using orthographic projection and blueprints and solve mathematic equations and interpret scale ratios. Use of measuring tools and interpreting a Bill of Materials are also components of this course.

WLD 1303 Cutting Processes 3 SCH

Prerequisite: WLD100, Welding safety/OSHA 10. This course will include the cutting of ferrous metals with manual motor-driven and automatic oxy-acetylene shape cutting equipment, as well as high-energy plasma arch and carbon-arch cutting.

WLD 140 SMAW 3 SCH

Prerequisite: WLD100, Welding safety/OSHA 10. In this introductory course students will be introduced to the Shielded Metal Arc Welding (SMAW) principles, processes and safe practice. Through practice and application students will associate SMAW electrode classifications with base metals and joint criteria and build pads of weld beads in the flat and horizontal positions. Students will produce basic SMAW welds on selected weld joints and perform visual inspection of welds for quality and tolerance.

WLD 145 SMAW 2 4 SCH

Prerequisite(s): WLD100- Welding safety/OSHA 10, WLD140. Advanced topics based on accepted welding codes. Training provided in all positions. The student will describe effects of preheating and post weld heating; explain precautions used when welding various metals and alloys; distinguish between qualification and certification procedures; and discuss problems of welding discontinuities. The student will perform open groove welds with mild steel in all positions. Student will demonstrate safe work practices.

WLD 150 GMAW 3 SCH

Prerequisite: WLD100- Welding safety/OSHA 10. In this introductory course students will be introduced to the Gas Metal Arc Welding (GMAW) principles, processes and safe practice. Through practice and application students will associate GMAW electrode classifications with base metals and joint criteria and build pads of weld beads in the flat and horizontal positions. Students will produce basic GMAW welds on selected weld joints and perform visual inspection of welds for quality and tolerance.

WLD 155 GMAW 2 4 SCH

Prerequisite: WLD100- Welding safety/OSHA 10, WLD150. Advanced topics based on accepted welding codes. Training provided with various ferrous and non-ferrous metals in all positions. The student will describe effects of preheating and post weld heating; explain precautions used when welding various metals and alloys; distinguish between qualification and certification procedures; and discuss problems of welding discontinuities. The student will perform open groove welds with mild steel in all positions. Student will demonstrate safe work practices.

± WLD 160 Flux Cored ARC Welding 2 SCH

Prerequisite(s): WLD100- Welding safety/OSHA 10. The purpose of this course is to teach students to demonstrate equipment safety checks; identify Flux Cored Arc Welding (FCAW) equipment parts; demonstrate the procedures for running a continuous bead in the flat position; demonstrate the procedures for welding a butt joint, a T-joint, a lap joint, and an outside corner joint in the flat, horizontal, and overhead positions; and demonstrate the procedures for making an open butt v-groove weld.

± WLD 171 GTAW 3 SCH

Prerequisite(s): WLD100- Welding safety/OSHA 10. Through classroom and/or lab/shop learning and assessment activities, students in this course will: explain the gas tungsten arc welding process (GTAW); demonstrate the safe and correct set up of the GTAW workstation; relate GTAW electrode and filler metal classifications with base metals and joint criteria; build proper electrode and filler metal selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes and filler material in the vertical position; build pads of weld beads with selected electrodes and filler material in the overhead position; perform basic GTAW welds on selected weld joints; and perform visual inspection of GTAW welds.

WLD 1763 GTAW 2 3 SCH

Prerequisite(s): WLD100- Welding safety/OSHA 10, WLD171. Advanced topics in GTAW welding, including welding in various positions and directions on sheet metal, pipe, tube and exotic materials. Back-purging will be utilized for welding critical open-root piping installations. Identifies causes and sources for weld pool contaminates.

± WLD 190 Welding Project Management 2 SCH

Prerequisite(s): 20 credits in WLD & permission of instructor. Utilization of welding and cutting skills combined with layout, design and working procedures, blueprint reading, math and special formula skills in project format.

± WLD 199 Occupational Work Experience 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 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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Manhattan Area Technical College

3136 Dickens Avenue
Manhattan, Kansas 66503

www.manhattantech.edu
785.587.2800 | 800.352.7575

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