

2017-2019 Catalog

Mitchell Technical Institute

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Mitchell Technical Institute (MTI) publishes this catalog to provide general information regarding program and course offerings. The information is accurate at the time of publication, but changes may occur before the next catalog is printed.

Reservation of the Right to Modify

Materials listed in this catalog are believed to be accurate at the time of printing. The Institute reserves the right to make changes that seem necessary or desirable, including course and program cancellations, requirements, financial fees and to add, alter or delete courses and programs. While reasonable efforts will be made to publicize changes, a student is encouraged to seek current information from appropriate offices. Content is subject to change without notice and does not constitute an offer to contract with any person. **It is ultimately the student's responsibility to be aware of current regulations, curriculum and the status of specific programs.** Students must also read the Student Handbook, available on the MTI website, which contains more information on student life and Institute policies.

Table of Contents

History	4
Vision Statement	4
Mission Statement	4
Institutional Learning Outcomes	5
General Education Philosophy	5
Accreditation	6
Location	6
Admissions	7
Paying for School	12
Student Services	17
Academic Information	20
Graduation Requirements	31
General Education	33
Course Descriptions	81
Faculty	118
Administration	122
PROGRAM OFFERINGS	
Agriculture & Transportation Technologies	
Agricultural Business	37
Agromony	38
Animal Science	39
ButlerEDGE	42
Diesel Power Technology	44
Power Sports Technology	58
Precision Ag Technology	59
Business & Service Industries	
Accounting	36
Business Management	36
Culinary Academy	43
Construction & Manufacturing Technologies	
Architectural Design and Building Construction	40
Electrical Construction and Maintenance	45
ECM/SCADA Option	46
Heating and Cooling Technology	49
Welding & Manufacturing Technology	64
Energy Production & Transmission	
Electrical Utilities & Substation Technology	47
Power Line Construction and Maintenance	57
Natural Gas Technology	56
Utilities Technology	63
Wind Turbine Technology	65
Engineering Technology	
Automation Controls/SCADA	41
GPS/GIS Mapping Technology	48
Information Systems Technology	51
Telecommunications	62
Health Sciences	
Human Services Technician	50
Licensed Practical Nursing (LPN)	52
Medical Assistant	53
Medical Laboratory Technology	54
Medical Office Professional	55
Radiation Therapy	60
Radiologic Technology	61
Online	
Administrative Office Specialist	69
Advanced Medical Imaging	70
Medical Office Professional	71
Small Business Management	72
Speech-Language Pathology Assistant	73
Advanced Technical Education	
Professional Truck Driving	76
Registered Apprenticeship (Power Line)	77
South Dakota Center for Farm/Ranch Management	78
South Dakota Leadership Academy	79
Technical Studies	80



Mitchell Technical Institute

**The best jobs
start here!**



About Mitchell Technical Institute

History

MTI opened in 1968 in a system of post-high school vocational technical education in South Dakota that included four area institutes and the South Dakota Office of Adult, Vocational and Technical Education. More than 17,000 individuals have graduated from MTI since it opened. The central mission of the Institute is to provide job preparatory programs on a full- or part-time basis to all who can benefit.

Highly visible from Interstate 90, the campus, consisting of four buildings, is situated on 80 acres.

The Institute is governed by the Board of Education of the Mitchell School District 17-2 and operates under rules and regulations set forth by the South Dakota Board of Technical Education. The Institute enjoys a close relationship with Mitchell and the James River Valley community. MTI has established advisory committees of community and regional representatives who provide program input and support.

MTI is accredited by the Higher Learning Commission and received a recommendation for a 10-year renewal of accreditation in 2011.

In addition, the school is one of the top 150 community colleges nationwide as identified by the Aspen Institute.

MTI takes pride in the quality of its technical programs, in the high rate of graduate employment and in the rapid adaptability to business and industry needs by developing new programs and adding new dimensions to existing programs.

Since 2012 MTI has offered a variety of 100% online programs delivered through an interactive online learning environment.

MTI offers general education courses applicable in the technical world. Community and advisory committee input enables MTI to adapt to changing technologies, employer expectations, student interests and employment opportunities.

MTI also strives to meet the needs of the community through Advanced Technical Education and corporate education programs. Programs range from day-long business training to 24 month-long programs.

Vision Statement

Mitchell Technical Institute will be an innovative leader in technical education and a valued partner in global workforce development, preparing students for career success and lifelong learning in an ever-changing world.

Mission Statement

It is the mission of Mitchell Technical Institute to provide skills for success in technical careers.

Our Core Values:

- **Learning:** MTI provides high-quality Associate of Applied Science degree, diploma and certificate programs which prepare students for successful careers.
- **Life Skills:** MTI prepares graduates for lifelong learning by building skills in technology, communication, professionalism, problem-solving, teamwork, and adaptability.
- **Access:** MTI provides educational services and quality training to students, alumni, businesses, and the community, both on campus and at a distance.
- **Innovation:** MTI integrates state-of-the-art technologies, instructional methods, and facilities to deliver a high-quality, unique educational experience.
- **Excellence:** MTI commits to improve student learning and institutional effectiveness through a system of assessment and continuous review.
- **Talent Investment:** MTI recruits, develops, and invests in skilled, dedicated, and student-oriented faculty and staff.
- **Community:** MTI builds student community through social and recreational activities, counseling support, and a student government structure administered through organized student services.
- **Respect and Diversity:** MTI seeks and values a diverse population, responds to the unique needs of individuals, and recognizes the dignity and worth of all people.
- **Advocacy:** MTI promotes the value of technical education through the development of relationships with stakeholders and activities that raise awareness of the institute's mission.

Institutional Learning Outcomes

Mitchell Technical Institute promotes the development of six core abilities—foundational learning outcomes that will prepare a student to become a productive member of the workforce and a life-long learner ready to grow within his or her chosen profession. The MTI institutional learning outcomes will enable a graduate to:

- Communicate effectively through both oral and written means
- Demonstrate a professional attitude and work ethic
- Apply reasoning and critical thinking to solve problems and seek information
- Work cooperatively in a team environment
- Use computer technology within a field of study
- Apply technical skills required of an entry-level technician in a chosen field.

General Education Philosophy

General Education is that part of our students' education that goes beyond learning technical skills and allows students to become well-rounded, higher-functioning citizens of the world. As an institute of higher learning, we are committed to the inherent value of general education and know that critical thinking ability, communication skills, information literacy, math and problem solving skills and more, are crucial for our graduates' success in their future technical careers. We also recognize that an associate's degree or diploma at Mitchell Technical Institute must mean something more than job skills. Our students must become lifelong learners with the ability to adapt to a changing world and ever-increasing job expectations. To this end, general education learning outcomes that all MTI graduates should possess have been identified as follows:

Math

Students will understand and apply essential mathematical processes and analysis.

- Perform computations using appropriate methods and/or technologies
- Demonstrate knowledge and application of measurement
- Demonstrate knowledge and application of formulas
- Use math processes to solve problems
- Apply problem-solving steps.

Human Relations

Students will apply human relationship skills to work successfully in a diverse society.

- Demonstrate awareness and respect for people and their differences

- Ask for and listen to others' opinions and solutions
- Identify individual strengths and challenges in occupational relationships
- Apply team skills to group projects
- Demonstrate conflict resolution techniques
- Understand the benefits of community involvement and civic responsibility.

Technology

Students will use computer technology to access, organize and communicate information.

- Use word processing, e-mail and presentation software to effectively and professionally communicate information
- Create and manage workbooks using spreadsheet software
- Use electronic resources to conduct research.

Communication

Students will communicate effectively with others using a variety of contexts and formats.

- Use standard English spelling, mechanics, grammar and structure
- Create written communication appropriate to the audience which clearly, concisely and accurately expresses ideas and conveys needs
- Participate effectively in groups by demonstrating the ability to speak, listen, respond and interpret
- Speak effectively, both formally and informally, in a variety of contexts
- Conduct, examine, interpret and document research responsibly.

Accreditation

Mitchell Technical Institute is accredited by the Higher Learning Commission at 230 South LaSalle Street, Suite 7-500, Chicago, IL, 60604; 800-621-7440. The Higher Learning Commission has accredited MTI as an associate degree-granting institution since 1989.

The MTI Medical Laboratory Technology program, offered for the AAS degree, is accredited by:

The National Accrediting Agency for Clinical Laboratory Sciences

5600 N. River Rd. Suite 720
Rosemont, IL 60018-5119
(773) 714-8880
www.naacls.org

The MTI Medical Assistant program, offered for the AAS degree, is accredited by The Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs

25400 US Highway 19 North, Suite 158
Clearwater, FL 33763
(727) 210-2350
www.caahep.org

The MTI Radiologic Technology program, offered for the AAS degree, is accredited by:

The Joint Review Committee on Education in Radiologic Technology

20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
(312) 704-5300; Fax: (312) 704-5304
www.jrcert.org

The MTI Radiation Therapy program, offered for the AAS degree, is accredited by:

The Joint Review Committee on Education in Radiologic Technology

20 N. Wacker Drive, Suite 2850
Chicago, IL 60606-3182
(312) 704-5300; Fax: (312) 704-5304
www.jrcert.org

The MTI Heating and Cooling Technology program is accredited by:

HVAC Excellence

PO Box 491
Mt. Prospect, IL 60056
(800) 394-5268
www.hvacexcellence.org

The MTI Culinary Academy is accredited by the American Culinary Federation, Educational Foundation, Accreditation Commission (ACFEFAC):

American Culinary Federation

180 Center Place Way
St. Augustine, FL 32095
(800) 624-9458
www.acfchefs.org

Membership is maintained with many industrial associations, which provide licensing or certification for students.

Where Are We Located

MTI is located adjacent to Interstate 90 in Mitchell, South Dakota. The campus consists of four buildings: the Campus Center which houses most administrative offices, the Bookstore, The Center for Student Success, food service, health programs and most general education classrooms; the Technology Center, home to the Information Technology offices, computer help desk, Engineering division programs and the South Dakota Leadership Academy; the Energy Training Center for Energy division programs; and the Nordby Trades Center where students will find programs in the Ag & Transportation Technology and Construction & Manufacturing Technology divisions, in addition to the South Dakota Center for Farm/Ranch Management.

Directions and maps to the campus can be found at: <https://www.mitchelltech.edu/campus-map>.

Admissions

Admissions Requirements

Any person 16 years of age or older is eligible to apply for admission, regardless of previous education. Applicants will be accepted into educational programs in which they demonstrate a reasonable prospect for success. The Institute reserves the right to admit applicants based upon previous academic achievements and life experiences.

To be accepted to MTI and placed in a program, students must meet the admissions requirements of the Institute and the requirements established for each program. Institute requirements are as follows:

- Applicant must provide **proof that he/she is a legal US resident** (driver's license, Social Security card, student visa, resident alien card, etc.).
- Applicants must have a **high school diploma or a high school equivalency certificate** (GED) for full-time admission. (High school students requesting dual credit status must receive approval.)
- Applicants must **complete the established application process** as listed.
- Applicants must meet the **requirements of each program**. (Program requirements are found in each program section of this catalog.)
- Applicants must meet **minimum entrance examination scores**. (Remedial courses are offered to students desiring to improve their math and English skills.)

If the program is fully enrolled, students will be placed on a waiting list.

Admission to MTI is open to anyone without regard to race, color, creed, religion, sex, handicap, economic status, national origin, or ancestry, in accordance with federal law.

How to Apply for Admission

Interested persons are invited to call, write or visit Mitchell Technical Institute. Offices are open Monday through Friday. Campus tours and presentations may be arranged. The staff can provide the necessary forms for admission to the Institute and the program of your choice.

Admissions Process

In order to be considered for admission to Mitchell Technical Institute, an applicant must complete the following requirements:

1. Submit an Application for Admission. The application form is available at most high school guidance offices, at the MTI campus and online on the MTI website.
2. Send an *official* copy of your academic records (high school transcript, college transcript or high school equivalency certificate). Your high school, the registrar of the last college you attended, or the testing center where you took the General Education Development test can provide copies of your academic records.
3. In order to be accepted into a full-time program of study, you must meet the required entrance examination scores or submit entrance examination test scores ie. ACT, SAT, ACCUPLACER, etc. All applicants must submit entrance examination scores or schedule an appointment to complete the entrance exam. The admissions test may be waived for students enrolled in fewer than 12 semester credit hours. Test scores from a 5-year period will be accepted.
4. Provide MTI with a photocopy of a birth certificate, driver's license, or other legal document to certify age and resident status.
5. Students in health sciences programs will be required to submit to a criminal background check. The cost is the responsibility of the student.
6. Pay a \$60 non-refundable matriculation fee.
7. After acceptance to a program:
 - A start date will be identified.
 - Students will register for courses.
8. Once a program is full, a tuition deposit of \$150 will be required of all students accepted to that program. This is a tuition deposit and will be applied to the student's tuition the first semester of classes. In the event a student opts not to attend, **the tuition deposit is non-refundable.**

Students with Disabilities

All enrolled students with disabilities have equal access to all programs and activities at Mitchell Technical Institute offered in accordance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Most programs have minimum physical standards that students must meet. Individual program standards can be reviewed with an Admissions representative.

Placement Testing Policies

1. The tester must have applied to Mitchell Technical Institute (MTI) before testing.
2. The Placement Tests offered at MTI are the ACCUPLACER and the Residual ACT.
 - a. ACCUPLACER
 - i. All Programs
 1. Sentence Skills
 2. Elementary Algebra
 3. Reading
 - b. Residual ACT
 - i. Students applying for Radiologic Technology
 - ii. Home schooled students
3. Cost
 - a. Residual ACT
 - i. Free to prospective Radiologic Technology students
 - ii. Free to home schooled students
 - iii. \$35 for students trying to qualify for Star Scholar
 - b. ACCUPLACER
 - i. Free for initial placement test
 - ii. Free re-testing for acceptance
 - iii. \$10 per section or \$35 for entire test if retesting to "test-out" of prep class less than one week prior to start of school
4. Retesting
 - a. Students must wait 30 days before re-testing
5. Transfer/Transcribed Credit
 - a. Transfer/Transcribed credit for ENGL 101 meets the placement testing requirements for English and reading
 - b. Transfer/Transcribed credit for MATH 101 or MATH 104 meets the placement testing requirements for algebra
6. Testing for other schools
 - a. ACCUPLACER
 - i. \$35 for entire test
 - ii. \$10 per section
 - b. COMPASS
 - i. \$35 for entire test
 - ii. \$10 per section
7. Results mailed to other schools after testing for or attending MTI
 - a. \$5 fee
 - b. Must have \$0 balance with Business Office

Required Immunizations

South Dakota state law (SDCL 13-49-27.1) states that immunizations are required for students entering public or private postsecondary educational institutions in South Dakota. "Public or private postsecondary institution" or "institution," is any entity permitted to offer postsecondary education credits or degrees in South Dakota. "Student" is any person born after 1956 who is registering for more than one class during an academic term such as a quarter or semester. The term includes any person who meets face-to-face at least once per week to receive instruction. The term does not include any person who receives non-credit-bearing or on-the-job training services.

Any student entering a public or private postsecondary education institution in this state for the first time after July 1, 2008, shall, within forty-five days after the start of classes, present to the appropriate institution certification from a licensed physician that the student has received or is in the process of receiving the required two doses of immunization against measles, rubella and mumps. As an alternative to the requirement for a physician's certification, the student may present certification from a licensed physician stating the physical condition of the student would be such that immunization would endanger the student's life or health; certification from a licensed physician stating the student has experienced the natural disease against which the immunization protects; confirmation from a laboratory of the presence of adequate immunity; or a written statement signed by the student that the student is an adherent to a religious doctrine whose teachings are opposed to such immunizations. If the student is under the age of 18, the written statement shall be signed by one parent or guardian.

MTI requires that the documentation from the student be submitted within 45 days after the start of classes.

A student allowed to register while completing the round of required vaccinations who fails to provide satisfactory documentation of his or her immune status or of a medical excuse shall not be permitted to attend classes after the 45th day or, in the case of classes delivered in less than 45 days, to register for or to attend classes beginning in a subsequent term. Every attempt should be made to collect this information at the time of admission. Students who are unable to ascertain their immunization status may obtain, at their own expense, the necessary tests and vaccination from their own physician.

In the event the South Dakota State Department of Health declares an epidemic of measles, mumps or rubella, MTI shall provide to the State Department of Health a list of students who have not submitted immunization documentation. Subsequent campus actions shall consider the advice and authority of the South Dakota State Department of Health. Students who have no vaccination or immunity against the required preventable infectious diseases may be dismissed from the campus.

Vaccination for hepatitis B is required for students before they can be admitted to certain health profession programs. Each institution will compile information about current program-related vaccination requirements and make this information available to students along with other curricular and registration materials. It will be the responsibility of the department of the specific health profession program to ensure that the vaccination requirement has been met.

Immunization for tetanus, diphtheria, poliomyelitis, varicella and meningitis is recommended, as is a tuberculin test. Vaccination for hepatitis B is also recommended, and an annual influenza vaccination is recommended for students to minimize disruption of routine activities during influenza outbreaks.

Admissions Guidelines

Admission to MTI is granted based on the preceding criteria. In cases where special consideration is needed, the ultimate decision regarding the admission of a student rests with the admissions committee consisting of Admissions personnel, the Director of Admissions, the Dean of Academics or designee and an instructor. The committee may consider high school GPA and class rank, a personal interview, college GPA (if applicable), GED test scores (if applicable) and entrance examination scores in determining a candidate's admission status. The goal of the Admissions Committee is to accept students who can master the training and education at MTI. Admission criteria is available in the Admissions Office.

Some programs may have added requirements. Students who do not take the ACT test may substitute the ACCUPLACER examination at MTI. ACT scores will be reviewed by the Admissions Committee and the Committee will determine if a student needs to complete the ACCUPLACER or if the ACT score will be accepted in lieu of that test.

For students taking the ACT, the college code number for Mitchell Technical Institute is 4958.

Non-High School Graduates, Including Home-Schooled Students

Students who are home-schooled may be admitted to MTI with evidence of a high-school completion certificate/diploma from an accredited agency or school or with a GED. Home-schooled students will also be required to meet minimum requirements on the ACT. The Admissions Office will work with any home-schooled student to make sure that their MTI Application for Admission is complete.

Home School Entrance Requirements

Home-schooled high school students applying for admission into MTI have two options to meet the high school diploma requirement:

- 1) Provide a home-school high school record of completion and documentation of a completed GED and take the MTI's entrance assessment, meeting the required scores for the program
- OR
- 2) Provide a home-school high school record of completion that has been certified by an accredited outside educational organization and take the ACT entrance assessment, meeting the required scores for the program.

Online High Schools

Students who wish to complete their high school studies online must choose a school carefully. Many online high schools on the Internet are not legitimate high schools. These schools promise that you can complete your entire high school career in as little as a few weeks for only a small fee. In addition, while they state that they are accredited high schools, their accrediting agencies consist of nothing more than a website and list no employees or contact information. These schools are obviously fraudulent and the diploma you receive is not legitimate and may in fact be illegal to use in many states.

Schools such as the South Dakota Virtual School are legitimate, recognized institutions. For students who want to complete their secondary education as quickly as possible, MTI recommends a GED. The GED is self-paced and you can complete it very quickly if you are so motivated. If you wish to continue your education at a legitimate, postsecondary institution anywhere in the nation, you must complete actual testing at an authorized GED testing center. Information about where and how to get a GED is available from the MTI Admissions Office.

When to Apply

MTI academic semesters start in August and January and May. Most technical programs, however, begin with the fall semester. Application may be made at any time, but students are encouraged to apply by February for the following academic year. It is possible to take general education classes to fulfill program requirements during any academic term. Several popular programs fill early in the school year. Radiology Technology has a January application deadline so early application is encouraged. Check with the Admissions Office.

Non-Discrimination Statement

MTI does not discriminate in its employment of policies and practices, or in its educational programs on the basis of race, color, creed, religion, age, gender (including pregnancy), sexual orientation, disability, national origin, or ancestry, military/veteran status, genetic information or any other category protected by law in its education programs, admissions policies, employment policies, financial aid or other institute-administered programs.

Inquiries concerning the application of Title VI, Title IX or Section 504 may be referred to:

Vice-President
Mitchell Technical Institute
1800 E. Spruce St.
Mitchell, SD 57301
Telephone (605) 995-3023

or to:

Kansas City Office
Office for Civil Rights
U.S. Department of Education
One Petticoat Lane
1010 Walnut Street, 3rd floor, Suite 320
Kansas City, MO 64106
Telephone: 816-268-0550
FAX: 816-268-0599; TDD: 800-877-8339
Email: OCR.KansasCity@ed.gov

Dual Enrollment

Students may enroll in certain courses at Mitchell Technical Institute without applying for admission to a program. However, the student may need to meet the admissions criteria based on an entrance exam or related coursework. Dual Enrollment does not guarantee acceptance to the technical institute as a full time student at a later time. Dual Enrollment students will receive high school credit along with technical institute credit for the Dual Enrollment course. Dual Enrollment students are not eligible for financial aid and must re-register at the beginning of each semester.

- Courses offered are college courses with college-level expectations and standards. Students must keep current on their coursework – assignments, email, student portal, and other related activities. Students will be graded accordingly.
- Grades for Dual Enrollment courses will be provided to the student's local School District. Grades will also be recorded on an official Mitchell Tech transcript. All courses will become part of and remain on the student's permanent record.
- Students must follow Mitchell Tech's academic calendar and be in attendance when MTI classes are held. There are certain days that the high schools will have classes and MTI will not and vice versa.
- Students will be held to Mitchell Tech's Code of Conduct.
- It is the student's responsibility to directly contact instructors to inform them of absences. Parents should not call the technical institute to excuse students.
- Attendance policies in individual classes are listed on the class syllabus.
- Students are responsible to obtain their own textbooks prior to the first day of class.
- Students registered for Dual Enrollment courses will not be eligible for the "Credit by Exam" or "Test Out" options.
- A Windows-based laptop is required for all students taking an on-campus dual enrollment course. Mitchell Tech provides internet access on campus for all students.

- Dual-credit classes taken from MTI may or may not be accepted for transfer credit at other colleges or universities. Most MTI classes are not accepted for transfer credit at SD Board of Regent Universities. Other colleges or technical institutes may accept MTI classes for transfer credit and if a student intends to apply for transfer credit at another institution, it is recommended they first check with the Registrar at that school to determine transferability prior to enrolling in the MTI class.
- Completing credits through the dual-enrollment program at MTI may affect your full-time status while attending MTI which will impact your financial aid. Twelve credits is considered a full-time student. For more information visit: www.mitchelltech.edu/admissions/financial-aid-options
- Courses are subject to change or cancellation based on meeting minimum enrollment.

Paying for School

Tuition and Fees

The tuition is set by the South Dakota Board of Technical Education. There is no difference between resident and non-resident tuition. **For current tuition and fee information, request a copy of the current cost sheet from the Admissions Office or see it on the MTI website.**

Tuition Deposit

Tuition deposits will be required once a program is full. The tuition deposit is \$150 for all full programs. *This is a tuition deposit and will be applied to the student's tuition the first semester of classes.* In the event a student opts not to attend, **the tuition deposit is non-refundable.**

Additional Expenses

Students are required to purchase designated books, supplies, tools and uniforms as assigned by the instructor in each course. Most programs specify tools and/or uniforms that are characteristic of the occupation for which the student is enrolled. Many of these materials can be purchased at the MTI Bookstore. In some cases, students will be advised to purchase tools at MTI-sponsored tool fairs. Refer to the MTI Estimated Costs brochure for more detailed information.

Students who enroll need to prepare for some initial expenses at the start of the term. Books, supplies and tools will be required for all classes. MTI does not allow advances or charging of items from the Bookstore (except with a credit card), or with approval of special circumstances from the Financial Comptroller located in the Business Office. Please budget accordingly when making your school plans.

Laptop Expense

Some MTI programs require a laptop computer so that students can effectively integrate computing skills with their technical education. Many resources that instructors assign are online or require specialty software. To address these needs, MTI requires students entering a laptop program to purchase their laptops from MTI. The cost for an MTI laptop averages about \$1,000 including tax. Please note that our machines come fully loaded with the required software.

Whether it's Microsoft Office, or a specialty software for a technical program, a student's needs will be met by an MTI laptop. And MTI laptops are serviced for **free** by our Technology Office.

Laptop Return Policy

Laptops purchased from Mitchell Technical Institute may not be returned unless the student drops from a program within the first ten days of enrollment. Students who drop within the first ten days (official drop/add period) may return the laptop for a full refund. No refunds on laptops will be made after that date. **Any laptop returned must include all original materials including boxes, packing materials, software, and accessories.** No laptop will be accepted for return until its condition is approved by the MTI Technology Office.

Tuition & Fee Payment Due Dates

The tuition and fee payment due date is the first business day following the end of the drop period. The actual fee payment date will be posted on MyMTI, and in the Business Office.

It is the student's responsibility to be aware of all policies and regulations regarding registration and cancellation as stated in the catalog. By registering for classes, students are entering into a legal agreement to pay all tuition and fees, including any nonrefundable fees. This agreement between MTI and the student means that failure to make the required payment by the due date may result in additional late and installment fees, inability to register for classes, loss of access to the MyMTI educational portal and withholding of transcripts and/or diploma.

Adjustments to student accounts are updated as necessary, due to schedule changes that result from the course add and drop process. Student account information is available online in their MyMTI account. Statements can be viewed and printed in MyMTI. It is the student's responsibility to check email and MyMTI on a regular basis.

Tuition and Fees Refunds/ Excess Financial Aid

Most grants, scholarships and loans are applied directly to student accounts. If financial aid proceeds have not been applied to an account or the amount does not cover 100% of tuition and fees due, the student is responsible to pay the remaining balance. A credit balance on a student account is created when

excess financial aid remains after all eligible charges on a student's account are paid in full, or when an excess payment is made on the account. Refund checks will be issued to students after the payment due date. Students will be notified via email or MyMTI if they have a refund check. Students must present a school or state issued form of identification that includes a photograph, prior to receiving their refund check.

Forms of Payment

The Business Office accepts cash, Visa/MasterCard/Discover credit cards and personal checks for payments on student accounts. MTI reserves the right to refuse checks from individuals who have written a non-sufficient funds check to the Institute.

See third party authorizations below for information about having balances paid by an approved federal or state agency. Employer reimbursements are covered in the third party account section below.

Returned Checks

A \$30 processing fee will be charged for checks returned by the bank for non-sufficient funds (NSF checks). Any penalties assessed on a student's returned check will be charged directly to the student's account. When a check is returned for non-sufficient funds, the Business Office reserves the right to require payment by cash, credit card or certified funds. Unpaid NSF checks may be forwarded to collections if not paid within 30 days.

Payment Plan Information

Payment plans are available on a case-by-case basis as determined by the Business Office. A \$25 fee is assessed each term for payment plan arrangements. A payment plan arrangement will allow students to pay balances over a two or three month period, depending on how early students decide to set up the agreement. Students with a current payment plan, meaning that payments have been received according to the plan agreement, will be allowed to register for future terms.

NOTE: Students failing to make remaining payment plan payments in the current term will be administratively withdrawn from future terms after registering for the next term. Students will be notified in writing of withdrawal due to failure to pay balances due.

Past Due Accounts

Students are responsible for reviewing account balances and paying balances that are due. It is the student's responsibility to maintain an accurate billing address with the Center for Student Success. Once an account is past due and placed on hold, if an address is incomplete or inaccurate, the student may not receive an account statement and will pay additional late fees and interest if the account is forwarded to collections.

Prompt filing of financial aid documents is the student's responsibility. Students who do not file promissory notes and qualifying information will not receive financial aid funds in time to pay account balances. Those students will be subject to late fees and interest until loan proceeds are received. Late fees and interest will not be waived for late filings.

Any account that is past due is considered to be in a "Hold" status. Business Office holds will not allow students to receive transcripts, grades or registration material. Students should not ignore financial responsibility. Students unable to pay balances should discuss the reasons with the Financial Aid Office or the Business Office.

Third Party Account Payments

Organizations that agree to pay any part, or all of a student's account balance, are considered a Third Party payor on the account. The financial obligation to pay an account remains with the student. Students are responsible for filing the proper paperwork with the Business Office to allow MTI to bill the Third Party payor, on their behalf. Students are also responsible for knowing the terms of their program and any unpaid balance that may remain. The portion of the balance not covered by the Third Party payor is due at the time of the Tuition and Fee Payment due date.

As long as the proper paperwork has been filed, and the student has paid any remaining portion of the balance that is not to be paid by the Third Party payor, no additional late fees or interest will accrue on the account. If the Third Party payor denies payment on the account for any reason, the student is financially responsible for the balance and all fees and interest that accrue.

Employee tuition reimbursement plans, where the employer reimburses the student based upon their account billing or grades are not subject to Third Party payor status. The student will need to make arrangements to pay the entire balance by the due date and seek reimbursement according to their employer's policy.

Student Account Holds

Account balances that remain after the Tuition and Fee Payment due date are considered past due and will be placed in a "Hold" status. Business Office holds will not allow students to receive transcripts, grade reports or registration material. Students should not ignore financial responsibility. If students are unable to pay account balances, discuss the reasons with the Financial Aid Office or the Business Office.

Registration Cancellation

Students who register for future terms will have their registration cancelled if the student's account balance remains past due at the mid-term point of the current term. Students will have the ability to re-register once their account balance is paid in full.

Applying for Financial Aid

As soon as a student (and their parents based on federal guidelines to determine dependent status) has completed a tax return(s), if filing, a Free Application for Federal Student Aid (FAFSA) can be completed at www.fafsa.ed.gov.

After submitting the FAFSA electronically, the processing center will send a student aid report (SAR). It is used to determine a student's eligibility for need-based financial aid: the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), the Federal Work Study Program, Federal Perkins Loan and the Federal Direct Subsidized Student Loan. When the student receives the electronic copy of the Student Aid Report, s/he should check the report for accuracy. If any information is incorrect, the student must make corrections at www.fafsa.ed.gov.

Upon acceptance to MTI, the Financial Aid Office will send an award letter indicating the amount of financial aid for which the student qualifies and from which specific sources funding will be granted. All students who are the recipient of a Title IV federal student loan for the first time must complete entrance counseling and a Master Promissory Note at www.studentloans.gov before they can receive any proceeds from that loan.

Financial aid awards are available to students fourteen days after the first day of classes. To contact the Financial Aid Office at MTI, call (605) 995-3052 or (800) 684-1969 toll-free.

Satisfactory Academic Progress

Students attending Mitchell Technical Institute must be making satisfactory progress toward the completion of their academic goal—to obtain a degree or a diploma. Regular and punctual attendance is necessary. Active and committed class participation is required. To maintain financial aid, a student must have satisfactory progress. Full-time students receiving federal financial aid have a maximum of three semesters to complete two-semester programs and six semesters to complete four-semester programs. Part-time students' completion schedules will be prorated accordingly.

Students must successfully complete at least 67% of the credits attempted each semester in order to complete graduation requirements within the 150% time frame. Students who do not successfully complete 67% of 12 or more credits for two semesters may be suspended from financial aid.

A student must maintain a cumulative grade point average of at least 2.0. This review takes place at the end of fall, spring and summer semesters.

Passing grades of "A," "B," and "C" are counted toward completion of courses for satisfactory progress. Students are encouraged to repeat program courses when they earn a "D" and must repeat all program courses that they fail. Some programs have higher minimum grade requirements. See program descriptions for details.

Repeated courses are considered as normal credit hours and count towards the maximum time and enrollment status for a given semester. Students should note that financial aid will only cover the cost of one repeat of a previously passed course with a grade of A, B, C or D.

Failure of a pre-requisite course may have an impact on a student's ability to continue in a subsequent semester.

Students' academic and attendance records are available through the MyMTI web portal at any time. All students are strongly encouraged to monitor their own academic progress and ask their academic adviser any questions they may have.

Student Enrollment Status

A full-time student is one who is enrolled in 12 or more credit hours during a semester.

A three-fourths time student is one who is enrolled in 9-11 credit hours during a semester.

A half-time student is one who is enrolled in 6-8 credit hours during a semester.

A part-time student is one who is enrolled in 5 or fewer credit hours during a semester.

Financial aid calculations are determined by enrollment status. Financial aid is pro-rated for students enrolled in fewer than 12 credits in a semester. Courses other than degree- or diploma-fulfillment courses cannot be used in determining the amount of financial aid awarded. See the Financial Aid Office for details.

Return of Title IV Funds Policy

Students attending Mitchell Technical Institute who withdraw or who have been administratively withdrawn from all classes before 60% of a semester or term has elapsed are required to have a portion of their institutional costs returned to the federal financial aid program that provided the funds.

Financial aid disbursed is earned according to what percentage of a semester the student has attended. The student's last date of attendance is the critical factor in determining what portion of aid must be returned. See the MTI Student Handbook for more information.

Financial Aid Warning

A student will be placed on Financial Aid Warning who:

- Fails to maintain acceptable standards of completion at the end of the review period by achieving a 2.0 GPA and 67.0% completion
- Fails to remove himself/herself from Financial Aid Warning, but does complete a term of acceptable academic work.

Note: You must have a cumulative GPA of 2.0 or higher to graduate.

Financial Aid Suspension

A student will be placed on Financial Aid Suspension who does not satisfactorily remove himself/herself from Financial Aid Warning and does not complete a term of acceptable academic work.

A student is eligible for Reinstatement of Aid (only one semester) after suspension who has satisfactorily completed acceptable academic work (2.0 GPA and 67.0% completion) in a minimum of 6 credit hours taken in the same semester and at the same institute.

All coursework must apply towards the student's program and be at least 100 level (preparatory coursework and remedial classes are excluded). This student cannot receive financial aid for the period during which eligibility is being reinstated.

All federal financial aid students must complete their MTI degree program with credits attempted that are no greater than 150% of the degree requirements. For example, a degree program requiring 64 degree credits completed has a maximum of 96 credit hours attempted for the degree program.

Appeal of Financial Aid Suspension

Appeal of Financial Aid Suspension can be granted only in instances in which extenuating circumstances (i.e., medical) can be clearly documented. When a student desires to appeal the Financial Aid Suspension due to extenuating circumstances, he/she must submit a formal appeal to the Dean of Student Success prior to the established deadline. It is the student's responsibility to set up an appointment and meet with the Dean prior to the deadline; failure to do so will result in the appeal not being heard. The meeting of the Appeals Committee for the purpose of hearing appeals will be held on an as-needed basis.

The student will be notified immediately of the decision of the Committee, including any stipulations or recommendations accompanying the reinstatement of aid.

Reinstatement of financial aid does not imply waiver of any other school policy, rule, regulation, procedure, etc. be used in determining the amount of financial aid awarded. See the Financial Aid office for details.

Financial Aid Available

Grants

The Federal Pell Grant Program is a grant program funded by the federal government. The Student Aid Reports (SARs) from the processing center tell the MTI Financial Aid Office whether or not you qualify for this grant and, if so, for how much. Award amounts are prorated based upon need calculation from the FAFSA information and enrollment status.

The Federal Supplemental Educational Opportunity Grant Program

This is also a grant program funded by the federal government. Students who receive Pell Grants have priority for receiving this grant. Funding for this program is limited. Please apply early.

Work Opportunities

The federal government funds the Federal Work Study Program. The Financial Aid Office determines eligibility. If you qualify and funds are available, you are allotted an amount of money that you can earn during the academic year. Limited summer jobs during non-enrollment periods are also available. Contact the Financial Aid Office for details. Off-campus employment opportunities are also available. See the Career Services Office or the South Dakota Department of Labor for listings.

Loans

Student loans are financial aid that must be repaid in the future. All types of loans are disbursed by the semester.

Repayments begin typically six months after you leave MTI.

The Federal Perkins Student Loan

This is a campus-based loan that is federally funded with eligibility determined by the Financial Aid Office. You must have exceptional need to qualify for this loan.

The Federal Direct Student Loan Program

This low-interest loan program allows dependent students to borrow up to \$5,500 for their first year and \$6,500 for their second year. Independent students may borrow up to \$9,500 for their first year and \$10,500 for their second year. This program is either subsidized or unsubsidized. If the loan is subsidized, the interest does not accrue while the student is attending MTI. If the loan is unsubsidized, interest is charged from the time the loan is disbursed. Your award letter will indicate the type of loan for which you qualify.

Federal Direct Parent Loans (PLUS)

This program provides an opportunity for parents of dependent students to borrow funds for their student's educational costs. The Financial Aid Office processes applications. The funds come from the U.S. Department of Education. Loan amounts may not exceed educational costs minus other financial aid.

Other Off-Campus Agency and Financial Aid Sources

Temporary Assistance for Needy Families (TANF)

If you are in this program, check with your TANF coordinator to see what assistance you may receive to attend MTI.

Bureau of Indian Affairs (BIA)

If you qualify for BIA funds, you should start by contacting your local BIA Agency. Paperwork completed early will ensure timely arrival of your funding.

Vocational Rehabilitation

Financial aid is available for persons with disabilities. Contact your local vocational-rehabilitation office.

Veteran's Benefits

Contact the Veteran's Center at (888) 442-4551 or the Financial Aid Office at MTI to request information about the programs for which you may qualify. Veteran's Affairs website: www.benefits.va.gov/gibill.

National Guard Benefits

Members of the National Guard may qualify for up to 100% tuition benefits and monthly stipends under the Chapter 1606 program, Federal Tuition Assistance Program, and State Tuition Assistance. Contact your commanding officer, Financial Aid, or the Business Office for more information. Please note that the application and approval need to be done prior to the first day of classes.

Workforce Investment Act (WIA)

A program funded by the South Dakota Department of Labor and Regulations. Economically disadvantaged students may qualify for grants in certain educational programs. Contact your local DOL office for details.

Scholarships

The MTI Foundation offers a variety of scholarships to students who meet qualifications. Information regarding application deadlines is published periodically and distributed to students. See the Financial Aid Office or the MTI Foundation Office for more details. MTI also accepts any scholarships from outside sources. If receiving any scholarships from outside sources, you must notify the Financial Aid Office.

Student Services

The Center for Student Success

The Center for Student Success supports students in learning the technical and career skills needed to successfully complete their postsecondary degree. The Center serves as a beginning resource for students with questions or concerns about their coursework, degree completion, and overall success at MTI. Staff members are available to work with students to find solutions to their academic, personal and career-related questions. The Center also provides:

- Help with academic coursework, including tutoring, study aids, research databases, print resources (i.e. textbooks, magazines, newspapers, etc.), and electronic media
- Disability and learning services
- Diversity services
- Assistance with monitoring academic progress toward graduation, changing programs, or withdrawing from a program
- Information about MTI's Student Representative Board and other MTI clubs and activities
- Computer access, including internet, email, MyMTI and application software
- Printing, copying, and scanning services
- Guidance on where to access important campus services, such as Financial Aid, Business Office, Registrar, Career Services, Scholarships, etc.
- Information about off-campus resources, such as housing, counseling, transportation, financial sources, student discounts and available memberships, childcare and other support services.

Student Activities

MTI offers a wide variety of organized student activities including intercollegiate-sanctioned college rodeo. Other on-campus activities are sponsored by the Student Rep Board in cooperation with Student Services. Activities include intramural sports, social events, picnics, musical events, entertainment, etc. Additionally, each MTI student has access to the DWU/ Avera Sports & Wellness Complex.

Diversity Services

MTI has a dedicated staff member who conducts outreach, advising, student services and career coaching to students who belong to underrepresented groups. Students who need assistance are encouraged to contact The Center for Student Success.

Nontraditional Student Services

Mitchell Technical Institute provides assistance to prospective and enrolled nontraditional MTI students, particularly single parents and displaced homemakers. These services include:

- Career assessment
- Childcare providers listing
- Social service assistance
- Community resources information and referrals

Tutoring

Tutoring in various areas and subjects is available at no cost to MTI students in The Center for Student Success. Regular tutoring sessions are held throughout the week for general education classes, such as math, English and computer applications. Additionally, tutors may be available for all technical courses. These content area tutors will arrange to meet with students on a one-to-one basis as need arises.

Contact The Center for Student Success to learn more about tutoring services.

Career Services

MTI's Career Services & Advising Director offers assistance to students by providing employment leads and, in some instances, bringing employment interviewers to campus. Several workshops and job seeking-related activities are sponsored each year.

The Career Services Office maintains a comprehensive website for students and employers. For more information or job search assistance, contact the Career Services & Advising Director in The Center.

Student Printing

You will need to have your student ID card any time you wish to print to an MTI campus printer. When you are ready to print, simply print the document and then go to ANY print station on campus. Tap your tag on the card reader. Once the screen comes up, you can choose to print, view jobs in the queue or cancel the job. There are printers in every building on campus. Color printers are located in the Campus Center and in the Technology Center. All other printers are black and white.

Print costs are going up. To keep costs down, students and staff are encouraged to print all draft copies and those which do not require color in black and white. Only when you are ready to print your final document should you use the color printer.

Your job will remain in the queue for 60 minutes. If you forget, it will simply time out and delete. You will not be charged for jobs that do not actually print on paper.

Your account provides you with print security. No prints can be made from your account without your card.

Each semester MTI will allow you to print a predetermined number of copies. When you have reached your allotment, you must deposit money into your print account through the MTI Business office. Minimum deposit is \$5.00. At the beginning of the subsequent semester, you will receive another allotment of copies.

Like any campus technology issue, if you cannot retrieve your printed document, send a message to the MTI Help Desk and someone will work to help you resolve your issue.

Research and Library Resources

Students at MTI need current information in all academic and technical disciplines. In today's rapidly changing information-based society, MTI has found that a traditional "library" is not the best use of our resources. Instead, we have focused on providing electronic access to information. All students have Internet access in The Center. South Dakota's Internet-based library resources provide access to academic research databases.

For additional library resources, there is a formal agreement between MTI and the Mitchell Public and Dakota Wesleyan University libraries for student access to these facilities. A student must show a student ID card and proof of residency to be eligible for public library and DWU library privileges. In addition, The Center will also order materials from libraries statewide through the state's interlibrary loan system at no charge to students.

Student Computer & Laptop Use

Students who purchase computers from MTI for use in their programs have access to service and support through the MTI Information Technology office. Laptops are distributed and supported by the MTI Information Technology Office.

Students who purchase laptops as a program requirement may contact the IT department for technical support. The IT department is located in the Technology Center.

The campus IT department will not provide technical support to students using laptops/tablets not purchased and managed through MTI beyond network connectivity to our Wi-Fi network. Students must seek support through their vendor or a commercial computer support service.

Student access to computers is also available in The Center for Student Success. All enrolled students must follow the computer and email usage policies published in the MTI Student Handbook. Violation of those policies will result in disciplinary action.

Food Service/Café Cash

Meals are served for a charge during the hours students are in attendance. MTI has implemented a payment system called Café Cash. You can put money into your Café Cash account and use your student ID card to make food purchases. More information is available from the Center for Student Success or from the Business Office.

Housing

Although MTI does not own any student housing, the Campus Tech apartments, adjacent to the MTI Technology Center on the campus, are available to MTI students. The Admissions Office also maintains a list of available housing in the Mitchell area. Students are urged to be aware of their tenant rights and responsibilities.

Insurance

Mitchell Technical Institute DOES NOT carry insurance on students. Health insurance is the responsibility of each student and MTI urges each student to carry some type of health insurance. Injuries sustained while in class or lab are the responsibility of the student.

Students have the responsibility to communicate with their individual health insurance providers to make sure that coverage requirements are met.

Bookstore

Students may purchase required books and supplies in the MTI Bookstore located in the Campus Center. School theme items are also available. The Bookstore is open each class day and during the summer. Hours are posted. Cash, check, or credit card can be used for purchases at the MTI Bookstore.

In order to comply with Section 133 of the Higher Education Opportunity Act (PL110-315), Mitchell Technical Institute provides an online portal for students to determine which books they need for the courses in which they are enrolled. You will find the portal at <http://bookstore.mitchelltech.edu/>. New and used books may be purchased from the MTI Bookstore, or from any online vendor.

If the student is required to purchase course materials online or would prefer that option but does not have a credit card, a pre-paid credit card may be purchased through a bank or department store for a nominal one-time fee.

If the student participates in any program (Workforce Investment Act [WIA], Bureau of Indian Affairs [BIA], Vocational Rehabilitation, GI Bill, etc.) that includes the cost of course materials, the student should speak with the Bookstore manager about acquiring the necessary course materials.

Academic Information

Academic Advising

Academic advising helps students choose courses and fulfill graduation requirements. Academic Advisors are assigned to each student. Advising dates are scheduled each semester.

Registration

New students to MTI will be notified of the process and timeline of registering for classes by their Admissions representatives. Returning students will be notified of the registration process by the Registrar's office and by academic advisors.

Preparatory Courses

090-level preparatory, review courses will be offered for pass/no credit ("P"/"N"). Preparatory credits count toward course load, but are not figured in grade point averages.

Independent Study

The program of independent study must be approved, in writing, by the instructor overseeing the project. A detailed outline of the study project, including material to be covered, written work to be submitted, etc., must be developed. The plan must be submitted to the Registrar's office for approval by the Dean of Academics. In general, students may not take required courses by independent study. In cases of special circumstances, a student may request to take independent study in place of a normally offered course. Students should be aware that MTI tries to avoid such arrangements so that as many students as possible benefit from classroom and lab instruction.

Cancellation of Courses

MTI reserves the right to cancel a course or combine class sections due to insufficient enrollment or other related factors. Students will be notified and the Registrar's office will work with the students to assist with re-scheduling.

Course Numbering System

The following numbering system is used for all courses:

1. The two- to four-letter prefix designates the department or program area. A department may use more than one prefix.

2. The three-digit course number generally indicates the level of instruction. Courses numbered 090-099 are developmental and do not fulfill any requirements for any degrees or diplomas offered.

090-099	Preparatory/Review Level
100-199	First Year
200-299	Second Year

Course Sequence

Unless otherwise noted, courses in this catalog must be completed in the sequence listed.

Credit Hour System

The credit hour is the academic unit used at Mitchell Technical Institute. MTI defines a credit hour on the basis of the Carnegie unit. This defines a semester unit of credit as equal to a minimum of three hours of work per week for a semester. Thus, a unit of credit at MTI equates to three hours of student work per week for a minimum 15 weeks.

All credits require assimilation of specified knowledge and skills comparable to and consistent with learning objectives established for similar courses and levels at other accredited institutions of higher learning

Lecture Courses

For a lecture course, one credit is considered to be one 50-minute period of lecture class time and two hours of outside of class work per week.

Lab Courses

For a lab course, one credit is considered to be a minimum of 150 minutes of lab time per week. The 150 minutes may be a combination of time in the lab with faculty supervision and time the student spends on projects or activities on his or her own.

Internships

An internship or externship credit involves a minimum of 40 hours working at an assigned job location. The student will be working for an employer under the supervision of a qualified instructor.

Distance Education Courses

Courses that do not have the required face-to-face contact time (for example, hybrid, online, or correspondence) must also meet the credit hour standard of three hours of work per week for 15 weeks. A distance education course meets this standard if the course covers the same material in the same depth as a face-to-face version of the same course. If no face-to-face version exists at MTI, the course credit hour assignment is based on the total learning time

the instructor developing or teaching a course would expect for a student to satisfactorily complete the work of the course.

Grading Scale

MTI uses the four-point grading system. Final letter grades are assigned to represent levels of accomplishment.

A	Excellent	4.0
B	Above Average	3.0
C	Average	2.0
D	Below Average	1.0
F	Unsatisfactory	0.0
I	Incomplete	None
P	Pass	None
N	No Credit	None
W	Withdrawal	None
WP	Withdraw Passing	None
WF	Withdraw Failing	0.0
CR	Credit	None

Full-Time Student

A full-time student is one who is enrolled in twelve or more credit hours during a semester. Courses other than degree-fulfillment courses cannot be used in financial aid full-time status calculations. See the Financial Aid Office for details.

Part-Time Student

A part-time student is one who is enrolled in less than 12 credits per semester. Part-time students wishing to attend courses, but not seeking a diploma or degree, must complete a Limited Enrollment registration form which is available in the Admissions Office or Registrar's Office.

Student Academic Load

The maximum load to be carried during any semester by a student (including both face-to-face and online courses) is 21 credit hours or the number of hours specified in the curriculum for the particular semester, whichever is greater. A student who has attained a grade-point average of 2.5 on a load of at least 15 credit hours for the preceding semester may be permitted by the Dean of Academics to carry extra credit hours.

Internships

Internships are educational programs that allow students to receive practical work experience and academic credit while working in governmental,

community service, or business settings. Internships are a requirement for graduation at MTI in several programs. They generally occur at the completion of all required classroom courses, near the end of a semester or during the summer. Students must maintain a minimum cumulative GPA of 2.0, must complete two semesters of coursework in their program of study and any specific program requirements to be eligible to complete an internship. Internships at MTI are designed with intentional learning goals to assure that the experience will promote the academic, personal and career development of students. MTI will work with the site sponsor to support the success of the internship experience. ***Students share the responsibility in locating potential internship opportunities.*** No commitments should be made, however, until the internship has been approved by the program internship coordinator. After approval of an internship site is granted by a program's internship coordinator, the student must register for the internship course with the Registrar. All tuition and fees apply.

Additional information regarding internships at MTI may be obtained in the MTI Internship Guide or by speaking with a program's internship coordinator.

Course Schedule Changes Adds/Drops/Withdrawals

Course Add/Drop Period

Until the drop period ends, MTI may determine a student is not active and may be dropped from classes. After the drop period ends, any changes in a student's registration (including adding or dropping a course) must be completed on a Course Change Form. A course is not dropped by simply discontinuing attendance. Fall and spring semester courses may be added through the 5th day of a semester or with the approval of the course instructor. Courses may be dropped through the 10th day of classes each semester. Students will not be charged for courses dropped within the first ten days of the semester. Courses dropped during the first ten days of the semester will not be recorded on a student's transcript. Courses scheduled in shorter modules may be added or dropped through the 3rd day from the course start date of such classes.

Adding and/or dropping a course after the 10th day requires approval signatures of the student and the course instructor. If the proper drop/add procedure is not followed, the student will fail the course. Courses dropped after the semester's drop period has expired are NOT eligible for a refund unless the student is withdrawing from school entirely. (Refer to Tuition Refunds section.)

Withdrawing From a Course

A student may withdraw from a course after the 10th day and through the first 60% of the semester. A student who withdraws from a course before the 60% date will be issued a grade of "W" to indicate official withdrawal from the course. (A "W" grade is not computed in the student's grade point average.) Students who stop attending a class are not automatically withdrawn from the course. Students who quit attending class and have not completed the official withdrawal process will receive a failing grade. Students will not be allowed to withdraw from courses after the 60% day except under unusual circumstances and with approval.

60% dates will be published annually on the MTI website. **The 60% factor for summer term courses may vary from course to course.**

No registration change is official until the properly approved form is filed with the Registrar's Office; the official date of the withdrawal is the date the form is filed in the Registrar's Office. No refunds are issued to students who withdraw from a course.

Withdrawing From School Entirely

Students planning to withdraw from school entirely are required to complete a "Withdrawal Form" available in the Center for Student Success. On rare occasions, when completing the form is not possible for the student, then a formal notification to The Center for Student Success must be made either by phone call or MTI-issued email account. **A student is not officially withdrawn from the institute until the proper withdrawal form is filed.**

The process for officially withdrawing from school is:

1. Complete a withdraw form available in the Center for Student Success..
2. Complete an exit interview with Student Success Center staff.
3. Complete an exit interview with the Financial Aid Office.

Refunds for Official Withdrawals, if any, are calculated by the student's last date of attendance. A Return of Title IV funds will be calculated and federal funds will be sent back to the Department of Education. MTI has the right and will bill the student for any federal funds that are sent back to the Department of Education. Students who officially withdraw and who receive an earned grade for any course during the semester are not eligible for a refund for that course. (See the Business Office for a refund schedule.)

Students withdrawing entirely from school, wishing to re-enroll at a later date, are required to complete a new Application for Admission.

Administrative Withdrawal/Inactive Students

Students who have not demonstrated academic activity in all courses for a minimum of 10 consecutive days are considered "Administrative Withdrawals". Students who are considered Administrative Withdrawals will receive all failing grades marked as a "WF" on the transcript for any classes in which they are registered and their withdrawal date will be considered the last date of attendance.

A Return of Title IV funds will be calculated and federal funds will be returned to the Department of Education. **Please note:** When an Administrative Withdrawal is applied, MTI has the right and will bill the student for any federal funds that are returned to the Department of Education. MTI will not issue a refund for tuition and fees charged by MTI.

Academic Activity Defined

For students to receive federal financial aid, students must demonstrate academic activity. If academic activity is not confirmed in each class, federal financial aid will be cancelled or reduced based upon the classes where academic activity is confirmed. After 10 consecutive school days of inactivity, a student may be administratively withdrawn from all courses.

The United States Department of Education defines Academic Activity as:

- Physical attendance where there is direct interaction between the instructor and student;
- Completion and submission of an academic assignment, quiz or exam;
- Participation in a study group as assigned by the instructor;
- Participation in an online discussion;
- Initiated contact with the instructor pertaining to an academic course.

Academic Activity is NOT:

- Logging into an online class or MyMTI
- Meeting with an academic advisor

Attendance in all courses is considered critical at MTI. Academic success and student learning are closely related to attendance and participation.

All rosters shall be cleared of inactive enrollment as of the 10th day of the semester. Inactive enrollment results when students do not attend the first 10 days of class.

Late Withdrawals

Because of the generous time normally allowed to withdraw from a class, a late withdrawal is reserved for a compelling, extraordinary situation. A late withdrawal does not refund tuition/fees. If a late withdrawal is approved by the Center for Student Success, then a grade of "Withdraw Passing" (WP) or "Withdraw Failing" (WF) will be assigned by the instructor according to the student's academic performance. A WP has no effect on a GPA while a WF is calculated as a failing grade in the GPA. A WP and a WF will be counted as a withdraw for Federal Financial Aid eligibility.

The Dean of Student Success will provide you with information on how to file a petition for a Late Withdrawal and the appropriate form. You, as the student, will complete the form and write a separate statement explaining why you were not able to withdraw from the class by the "Last Day to Withdraw" deadline. If you are only late withdrawing out of some of your classes, you will need to explain why you are only withdrawing out of selected classes and why you are able to complete other classes. Include dates, details and any documentation that supports your explanation. Your instructor will need to sign your Late Withdrawal Petition and assign a WP or WF grade to each course.

Medical Withdrawal

A Medical Withdrawal is requested when a student is suffering from a medical condition that prevents the completion of the semester. If a student is approved for Medical Withdrawal, a refund of tuition and fees is also approved. The student receives a "W" which indicates on the academic record that the student was withdrawn from classes. If the student was aware of the medical condition at the time of registration, the petition will be denied. Medical Withdrawals are for all courses that the student is registered in for the semester.

Only illness or injuries, as related to the student, of extended duration are normally considered for a Medical Withdrawal. Consideration will be given only when an illness or injury makes it impossible to complete a term. A Medical Withdrawal requires withdrawal from all classes for that term. Medical Withdrawals will not be approved if the difficulty resulting from the injury or illness was present when the student enrolled for the term.

The following forms will be required to file for a Medical Withdrawal and should be returned to the Dean of Student Success:

1. Medical Withdrawal Request—The Medical Withdrawal Request is a request to be

medically withdrawn from MTI and should be returned to the Center for Student Success. If you have any type of financial assistance from the Office of Financial Aid, you must have them sign the form before turning it in.

2. Medical Release—The Medical Release form is to be signed, witnessed and returned, along with the Medical Withdrawal Request form by the student.
3. Health/Medical Provider Report—The Health/Medical Provider Report is a form which must be completed by the student and the student's physician(s) and must be returned directly to the Center for Student Success by the health/medical provider(s).
4. Letter of Explanation—The Letter of Explanation is a statement from the student regarding the severity of his/her medical condition, explaining why he/she is unable to complete the semester due to the medical condition.

Administrative Removal for Subsequent Semesters

A student registered for a subsequent (future) semester may be administratively removed from the future semester if the student has an outstanding account balance from the current semester or if the student is serving an academic or financial aid suspension. A student may register after his/her account is paid in full or the suspension has expired.

Withdrawal for Military Activation

Students who are members of the National Guard or reserves who are activated and have attended classes for 75% of the semester during which they are called to active duty, will be allowed to receive the grade they have earned and given full credit for the class/course, providing it is a C or better. Students who are activated prior to 75% of a complete semester will receive a "W".

Tuition Refunds

MTI realizes that students may find it necessary to withdraw from school entirely before a semester ends. The following applies to all students who withdraw entirely from MTI. The process is effective for all terms (including summer) and applies whether a student is a full-time student or a part-time student.

Students must complete an Enrollment Termination Form and submit it to the Center for Student Success in order to terminate enrollment. The student's last day of attendance will determine the calculation for return of Title IV financial aid funds.

Students withdrawing entirely from all coursework *during* the drop/add period (first 10 days of semester) will receive a 100% refund on tuition and fees. Students withdrawing entirely from all coursework *after* the drop/add period has expired will have refunds of tuition and fees calculated based upon the institutional refund policy. Contact the Business Office for details.

Attendance

Enrollment in MTI assumes maturity, seriousness of purpose and self-discipline. Every student is expected to attend each meeting of all classes for which he/she is registered, to arrive on time and to stay for the full class period. MTI recognizes that absences occur as a result of circumstances beyond a student's control, as well as from a student's failure to accept responsibility for attending class regularly.

Mandatory attendance requirements may be required in specific programs.

Each instructor will include on the course syllabus the attendance requirements for that class. Because courses differ in design, delivery, and requirements, the effect of absences on a student's grade may vary.

Defining Course Types

Traditional: Courses that meet face-to-face requiring student attendance on campus for the full semester.

Blended: A course that blends online and face-to-face delivery. Typically a substantial proportion of the content is delivered online, uses online discussions, and has some face-to-face meetings.

Online: No in-person class meetings are held. All of the content is delivered online. Typically there are no face-to-face meetings; however, some online courses may have a requirement of a campus-based meeting. If a student registered for a course and is unable to come to campus due to extenuating circumstances, alternative arrangements may be made.

President's List

A full-time student will be named to the President's List by achieving a term GPA of 3.5 or higher. The President's List is published each semester. Students receiving an incomplete grade ("I") in any class are not eligible for the President's List.

Midterm Grades

Each semester instructors submit mid-term grades. Mid-term grades are available to students through MyMTI and will be shared with Student Services staff and academic advisors to monitor the academic progress of students.

Final Grades

Final grades are due from instructors two to three business days after the final day of classes in a semester. Final grades are available to students through MyMTI within three to five business days after the final day of classes in a semester.

Incomplete Grades

Students with incomplete grades ("I") at the end of a semester should arrange for the completion of the course with the instructor. A student has 4 weeks from the end of the semester to complete an "I" grade. Failure to complete the course within the 4 weeks may result in a failing grade ("F") for the class. Incomplete forms are available from the instructor.

Grade Appeal

A student who believes that he/she received an inaccurate final grade should contact the course instructor immediately and attempt to resolve the grade dispute. If the grade is found not to be a clerical error, and the student feels the grade was awarded in a manner inconsistent with the criteria stated in the course syllabus, the student may appeal the grade by submitting a statement of reason for the appeal to the Dean of Academics no less than four calendar weeks into the subsequent term. The decision of the Dean of Academics is final.

Academic Warning

All students accepted into a program of study and who have not maintained a cumulative 2.0 grade point average (GPA), will be placed on academic warning.

Students may attend MTI for one semester on academic warning. While on academic warning, the student will be required to meet with student success staff on a regular basis. If the student fails to achieve a cumulative 2.0 GPA during the warning semester, the student will be placed on academic suspension. During a warning semester, students may continue to receive financial aid as long as all financial aid requirements have been met.

In order to assure satisfactory progress, students on academic warning should carefully monitor their GPAs. Any student whose GPA drops below 2.0 should meet with a Student Success Coach immediately to evaluate the probability of achieving the necessary GPA of 2.0 needed to graduate.

Please note: A student placed on academic warning will be notified in writing. A copy of that correspondence will be placed in the student's permanent file.

Suspension

There are three types of suspension: Academic, Non-Academic and Financial Aid.

Academic Suspension

All students accepted into a program of study who fail to achieve a cumulative GPA of 1.0 during their first semester of enrollment will be suspended with no academic warning. This type of suspension MAY NOT be appealed.

Students who have been suspended must wait at least one semester of full time enrollment before applying for re-enrollment. Students who re-enroll after suspension will be automatically placed on academic warning. Students may be suspended from a program twice. Registration will not be accepted a third time.

Students may appeal academic suspension if their cumulative GPA is 1.50 or higher. The appeal process is initiated by the student who must complete a Suspension Appeal Form available from the Dean of Student Success by the date specified on their notification of academic suspension. If the suspended student's appeal is successful, the student will be placed on academic warning and will remain enrolled at MTI for the following semester. The student on appeal will be required to meet with student success staff on a regular basis.

Non-Academic Suspension

Students may be suspended for other reasons including, but not limited to failed drug tests, disciplinary reasons, policy violations, etc.

Financial Aid Suspension

A student will be placed on Financial Aid Suspension who does not satisfactorily remove himself/herself from Financial Aid Warning and does not complete a term of acceptable academic work. See Page 15 for further details or contact the Financial Aid office.

Please note: A student placed on suspension will be notified in writing. A copy of that correspondence will be placed in the student's permanent file.

Repeating a Course

Students who have failed a course may need to repeat it to meet graduation requirements. Students may also choose to repeat a course in an attempt to raise an undesirable grade. **Financial aid restrictions may apply.** In the event a student repeats a course, both grades are recorded on the student's Mitchell Technical Institute academic records. The higher grade of the attempts will be calculated into the student's GPA.

Change of Academic Program

Students may request a change of program within the institute by completing a Request for Change of Academic Program form. The request should be filed with the Admissions Office. After a review of the admissions requirements and determination of program capacity, a change in program may be granted. After a student has been granted the change of program, earned credits will be applied to the new program. Only grades of "C" or better in comparable, required technical courses maybe transferred. Students changing programs will have the normal time frame to complete the new program. Program requirements follow the catalog requirements of current academic year. Those on academic probation will remain on probation in the new program. **Financial aid restrictions may apply.**

The student may apply for Grade Forgiveness for prior coursework that is not a requirement of the new program. See Grade Forgiveness policy.

Grade Forgiveness

Students who have transferred to a new program may apply for Grade Forgiveness. Grade forgiveness applies to previous coursework completed at MTI that is not a requirement for the new program. It is the student's responsibility to apply for grade forgiveness after successfully completing at least 12 credit hours in the new program with a minimum GPA of 2.0. The grades from the technical courses of the former program will remain on the student's transcript, but will not be used in any GPA calculation (grade forgiveness). Grade forgiveness has no impact on financial aid eligibility.

Readmission (Reinstatement)

Students who have left school in good standing will need to complete the application process if they wish to return. No application fee will be charged for readmission.

Previous courses must have been taken within seven years or applicants must provide evidence that their respective knowledge and skills fulfill current standards and requirements.

Students who have left school for reasons of unsatisfactory progress, nonpayment of fees, or suspension will need to do the following for re-admission into MTI:

1. Pay all past bills in full.
2. Receive approval from the Dean of Student Success.
3. If students need financial aid, such as Veterans benefits, Pell grant, etc., they will also need approval from the Director of Financial Aid or the respective agency.

Students who leave the Institute on academic suspension must wait one semester before applying for readmission.

Receiving Transferred Credits

Transfer credits from other post-secondary institutions will be individually evaluated to determine courses needed to ensure students complete all requirements to earn a Mitchell Technical Institute certificate, diploma or degree. A transfer student may have previous coursework accepted to fulfill MTI course and graduation requirements according to the following criteria:

1. Official transcripts shall be submitted for use in assessing courses and credits for transfer from accredited institutions. It is the student's responsibility to have his or her transcript validated by the Registrar.
2. A grade of C or better (2.0 on a 4.0 scale) shall be required in each course accepted in transfer. Transfer credits do not count toward a cumulative GPA. The grade recorded on the student's academic record will be "CR" (credit). Courses in the major area of study completed more than five years previously may not be accepted for transfer.
3. Technical courses shall be reviewed by the appropriate department(s) and the registrar to determine course equivalence and acceptance. Partial credit may be awarded for courses that do not meet all competencies of an MTI course. Courses outside of MTI's requirements will not be accepted for transfer.
4. The Registrar will determine course equivalencies to meet MTI's general education requirements in communications, mathematics, social sciences, behavioral sciences, and computer literacy.

5. Transfer students must complete a minimum of 25% of their coursework credits at MTI to earn a degree, diploma, or certificate.
6. To transfer credit, a student must be accepted before credits will be transcribed.

Transferring Credits to Other Institutions

Students who wish to transfer to another institution should contact the Admissions Office at that school for an evaluation of their MTI transcript. Whether or not to accept credits is at the discretion of the receiving institution. MTI does not guarantee the transfer of its credits to other post-secondary institutions.

Transcripts

Transcripts are copies of academic records. Official transcripts will be issued on the following basis:

1. Copies of official transcripts cost \$5.00 each.
2. All requests for transcripts are made through the National Student Clearinghouse.
3. Official transcripts include academic information of all completed and in-progress courses to date, grade point average, and degree(s) earned. Official transcripts are mailed in a sealed, labeled envelope upon request.
4. Grade reports (unofficial transcripts), labeled as "Issued to Student," are available at no cost.
5. Walk-in transcript requests will be accepted during regular office hours. A photo ID is required.
6. Students can obtain an unofficial transcript by logging into their MyMTI account.

Credit for Prior Learning

Prior learning, sometimes called experiential learning, is knowledge that is obtained outside the college setting prior to entering or returning to college.

This nontraditional learning is generally acquired through work experience, travel, workshop or conference participation, advanced high school courses, volunteer work, in-service training, military training, adult or continuing education, recreational activities or hobbies, self-initiated reading and study, and involvement in professional organizations. In other words, prior learning describes the skills and knowledge you've acquired while living your life that may earn you credits towards your degree or diploma at MTI.

Mitchell Technical Institute does not award credit for experience alone. Credit for prior learning is awarded for verifiable skills and learning gained through the experience. Achievements can be evaluated by completing standardized tests, challenging courses or completing a prior learning portfolio with accompanying documentation. Fees may apply as described in the following list of policies:

Credit for Prior Learning Policies

- Students must complete a minimum of 25% of their coursework credits at MTI to earn a degree, diploma, or certificate. Credits earned through any combination of transfer college credit or any type of prior learning may not exceed 75% of the program's total requirements.
- Academic credit may only be awarded for those courses directly applicable to curriculum requirements in the student's declared certificate, diploma, or degree program as outlined in the MTI catalog and website.
- All credit awarded for prior learning will be given a grade of CR on the student's academic record (transcript). Prior learning credits do not count toward a cumulative GPA at MTI.
- Academic credit may only be awarded for learning directly related to the course identified and publicized learning outcomes.
- All work assessed for prior learning credit must meet a minimum proficiency for all of the course competencies.
- Credits awarded for prior learning satisfy prerequisite requirements in the same manner that their course equivalencies do.
- Students requesting credit for prior learning must be enrolled in a specific degree, diploma, or certificate program at MTI.
- All documentation, including portfolio materials, challenge examinations, or other materials utilized in the credit for prior learning process become property of, and are maintained, by Mitchell Technical Institute. The documentation will become part of the student's academic record.
- The credit for prior learning process must be initiated by the student requesting credit.
- A student may not request credit for prior learning past the add/drop date for a course in which they are currently enrolled.
- A student may not request credit for prior learning for a course that they have audited.
- Partial credit may be awarded if prior learning meets some, but not all, of the course learning outcomes. In such cases, students will be required to enroll in and complete the full course. However, tuition and fees will only be

charged for the remaining credits not awarded through the credit for prior learning process.

- Students may appeal the decision on awarding credit for prior learning. To appeal a decision regarding credit for prior learning, students should follow MTI's standard formal appeal process as outlined in MTI Policy 1045 and Policy 1046.

Advanced Placement (AP) Examination

Advanced Placement Exams are administered primarily in the high schools. Mitchell Technical Institute does not administer AP exams. However, credit may be awarded to students who achieve a minimum score on an AP exam. A credit type of PL will be used to transcribe credit earned through AP exams.

Students must provide proof of a minimum score on the AP test in the form of an official AP score report or ACE transcript.

- To have an AP score sent to MTI, designate MTI to receive the scores when registering for an AP test. MTI's school code is 7038.
- If students have taken an AP exam but did not designate MTI as a recipient, an AP transcript may be requested by contacting:
 - o Phone: (212) 632-1780
 - o Email: apstudents@info.collegeboard.org
 - o College Board website: <https://apscore.collegeboard.org/scores/#/>
- To order an ACE transcript, see <https://www2.acenet.edu/credit/?fuseaction=transcripts.main>.

MTI does not charge fees to students for the credits they earn through AP exams.

College-Level Examination Program (CLEP)

Mitchell Technical Institute does not administer the College Level Examination Program (CLEP). However, CLEP credits earned for courses may be accepted by MTI. Before taking any CLEP examination, students should consult with their academic advisor and the registrar to assure transfer of the CLEP credit. A credit type of PL will be used to transcribe credit earned through CLEP exams.

Students must provide proof of a minimum score on the CLEP test in the form of an official CLEP score report or ACE transcript.

- To have a CLEP score sent to MTI, designate MTI to receive the scores when registering for a CLEP test. MTI's school code is 7038.
- If students have taken a CLEP exam but did not designate MTI as a recipient, a CLEP transcript may be requested by contacting:
 - Phone: (212) 237-1337 or (800) 257-9558
 - Email: clep@info.collegeboard.org

- College Board website: <https://secure-media.collegeboard.org/digitalServices/pdf/clep/clep-transcript-request-form.pdf>
- To order an ACE transcript, see <https://www2.acenet.edu/credit/?fuseaction=transcripts.main>

MTI does not charge fees to students for the credits they earn through CLEP exams.

DSST/Prometric Exam

The nationally recognized DSST Program allows students to receive college credits for learning acquired outside the traditional classroom. Information on taking DSST tests is available at http://getcollegedcredit.com/test_takers/

A credit type of PL will be used to transcribe credit earned through DSST exams.

A DSST transcript may be requested online at www.getcollegedcredit.com. Transcripts should be sent to Mitchell Technical Institute Registrar's Office, 1800 E Spruce Street, Mitchell, SD 57301. MTI does not charge fees to students for the credits they earn through DSST exams.

Professional Certifications

Mitchell Technical Institute awards credit for professional certifications on a case-by-case basis. A credit type of PL will be used to transcribe credit earned for certifications. The registrar and department will determine specific credit awards. MTI awards credit for prior learning if:

- There is adequate proof of the certification and its currency.
- The certification is equivalent to the learning outcomes in the appropriate MTI course(s).

There is no fee to the student to receive credit for applicable certifications earned prior to attending MTI.

Military Experience

You may receive credit for selected military training or experience. To do so, you must furnish MTI with a copy of your Joint Services transcript or similar official documents. ACE has evaluated many courses and schools completed within military service. MTI follows the credit recommendation of ACE found in the Guide to the Evaluation of Educational Experiences in the Armed Services to award academic credit for these courses and schools. A credit type of PL will be used to transcribe credit earned for military training.

For Army, Navy, Marines, and Coast Guard military experience, students should submit an online request at <https://jst.doded.mil/smart/signIn.do> to send Mitchell Technical Institute a Joint Services transcript.

For Air Force experience, students should order an official transcript from the Community College of the Air Force to be sent to MTI. Order transcripts online at <http://www.au.af.mil/au/ccaf/transcripts.asp#trans> or call (334) 649-5000.

MTI does not charge fees to students for the credits they earn through military experience.

American Council on Education (ACE)

Courses and programs offered through many organizations (AT&T, GE, AIB, Police Academy, etc.), including CLEP, AP, DSST, and military training, have been evaluated for credit by the American Council on Education (ACE). Mitchell Technical Institute accepts the recommended ACE credits when applicable to general education and technical courses offered at MTI. A credit type of PL will be used to transcribe all credit transcribed from an ACE transcript.

If you have more than one type of prior learning (CLEP, AP, and military, for example), you may be able to save money by ordering a consolidated ACE transcript with all of your test scores.

To order an ACE transcript, see <https://www2.acenet.edu/credit/?fuseaction=transcripts.main>
MTI does not charge fees to students for the credits they earn through ACE transcripts.

Established MTI Tests for Credit

Students may be allowed to receive credit by taking an exam ("test out") for specifically identified courses. Within the first ten days of class, an instructor will notify students if a test out option is available for the course. A Test for Credit Form is available in the Registrar's office and must be filed with the instructor and a test fee paid to the Business Office prior to the student taking the test.

The non-refundable testing fee is \$50 for up to three credits, plus \$10 for each additional credit. If the test includes lab exercises, there may be additional fees assessed.

Students must achieve an 80% or higher score on the exam to receive credit for the course. A credit type of EX will be used to transcribe the credit earned from a test out. A test out may not be repeated.

Students considering testing out of a class should check with Financial Aid to determine how the test out might affect financial aid or scholarship status.

Challenge Tests for Credit

On a case by case basis, a student with an adequate level of learning may be allowed to take a comprehensive exam (challenge test) to prove

mastery of learning outcomes in a program-specific course.

If a student feels s/he has sufficient knowledge in a subject area, s/he may ask the instructor regarding the possibility of taking a challenge test to receive credit for the course. The instructor will determine whether the student should be given this opportunity based on the student's background, the nature of the course, and the capacity to adequately test the student.

Students may not challenge a course to improve a previous grade earned in that course.

A Test for Credit Form is available in the Registrar's office and must be filed with the instructor and a test fee paid to the Business Office prior to the student taking the test.

The non-refundable testing fee is \$50 for up to three credits, plus \$10 for each additional credit. If the test includes lab exercises, there may be additional fees assessed.

Students must achieve an 80% or higher score on the exam to receive credit for the course. A credit type of EX will be used to transcribe the credit earned from a challenge test. A challenge test may not be repeated.

Students considering challenging a class should check with Financial Aid to determine how the test out might affect financial aid or scholarship status.

Prerequisite Waiver

Depending on background or experience, you may be allowed to take some courses without first taking a prerequisite course. To take a course without first taking the prerequisite, you must obtain the approval of the head of the appropriate academic department.

Complete the Prerequisite Waiver Request Form and submit it to the Registrar's Office. A \$20 per course fee will be charged to apply for waiver of prerequisites not taken.

Individualized Prior Learning Portfolios

Credit for prior learning experience may also be awarded in some cases to students with verifiable work experience, including military experience and training, when no formal transcript, certification, or exam score is available. A portfolio may be submitted to demonstrate that your knowledge is equivalent to what you would have learned in a comparable MTI course. The written component of the portfolio provides an opportunity for you to highlight your personal experience and to affirm that your skills and learning equate to the course you are challenging.

A prior learning portfolio is a detailed narrative and documentation illustrating college-level learning. The documentation provided will vary by course and may include samples of your work; awards and honors; employer letters of endorsement; certificates showing completion of workshops or seminars offered by business and industry; and any other relevant evidence of what you have learned. Preparation and content of the portfolio are the responsibility of the student and must be of sufficient breadth and depth to validate the student's stated learning.

The portfolio must include the following sections:

1. Course syllabus (available from the instructor or the registrar), including course description and learning objectives
2. Credit for Prior Learning Portfolio Form signed by student and business office staff
3. Academic Honesty Statement signed by student
4. Current resumé
5. Course specific prior learning narrative detailing your personal experience and learning that equates to the course learning objectives
6. Documentation to demonstrate learning of course objectives (work samples, awards, employer letters, etc.)

Once the portfolio is submitted, it is evaluated to determine if the student has submitted sufficient documentation to demonstrate attainment and mastery of the specific course learning outcomes and/or technical competencies. A personal interview or hands-on demonstration of skills may be requested by the instructor as part of the evaluation.

More than one prior learning portfolio may be submitted by the student if more than one course is appropriate to their knowledge and skills.

A credit type of PL will be used to transcribe credit earned through submitted portfolios.

A non-refundable evaluation fee of \$50 (up to three credits, \$10 for each additional credit) per portfolio is required at the time the student submits a portfolio for evaluation.

Course Audits

Courses may be audited for no credit. There is a \$40 per course fee to audit a course. A Class Audit form is available in the Registrar's Office. In some situations, MTI instructors and administration may require a student to audit a class the student successfully completed in the past. This generally occurs when a student had discontinued their education or is in need of a skills refresher. Financial Aid is not available

for audited courses and these courses do not count toward full-time status. Audited courses do not meet graduation requirements. Students enrolled for credit have first priority for space available in any MTI course.

Individuals not accepted to a program may audit a class, but restrictions apply. Contact the Registrar's Office for details.

Exceptions to Regulations

Students who request exception to academic regulations must submit a letter to the Dean of Academics explaining special circumstances which might permit waiver of MTI regulations. Requests will be referred to the Dean of Academics for review with input from the department, the Registrar, Director of Admissions, or other interested parties.

The Family Education Rights and Privacy Act of 1974

The Family Education Rights and Privacy Act of 1974 protects the privacy of students' educational records. The statute governs access to records maintained by educational institutions and the release of educational information. The Institute is in compliance with the Family Educational Rights and Privacy Act of 1974. Compliance procedures are further defined in the Student Handbook.

The statute provides students access to their permanent files and an opportunity for a hearing to challenge the records if they are inaccurate or otherwise inappropriate. Permission must be obtained from a student before releasing personally identifiable data from the records.

As of January 3, 2012, the U.S. Department of Education's FERPA regulations expand the circumstances under which your education records and personally identifiable information (PII) contained in such records — including your Social Security Number, grades, or other private information — may be accessed without your consent. First, the U.S. Comptroller General, the U.S. Attorney General, the U.S. Secretary of Education, or state and local education authorities ("Federal and State Authorities") may allow access to your records and PII without your consent to any third party designated by a Federal or State Authority to evaluate a federal- or state-supported education program. The evaluation may relate to any program that is "principally engaged in the provision of education," such as early childhood education and job training, as well as any program that is administered by an education agency or institution. Second, Federal and

State Authorities may allow access to your education records and PII without your consent to researchers performing certain types of studies, in certain cases even when we object to or do not request such research. Federal and State Authorities must obtain certain use-restriction and data security promises from the entities that they authorize to receive your PII, but the Authorities need not maintain direct control over such entities. In addition, in connection with Statewide Longitudinal Data Systems, State Authorities may collect, compile, permanently retain and share without your consent PII from your education records and they may track your participation in education and other programs by linking such PII to other personal information about you that they obtain from other Federal or State data sources, including workforce development, unemployment insurance, child welfare, juvenile justice, military service and migrant student records systems.

Directory Information

The Institute discloses, without consent, "directory" information. Directory information is defined as:

- Student's name, address and phone number
- MTI issued email address
- Major field(s) of study
- Dates of enrollment
- Degree(s) and awards received
- Participation in officially recognized activities/sports
- Information which denotes accomplishments or achievements
- Individual or group photographs

The Institute provides students with the opportunity to request nondisclosure of information. Students who wish to request nondisclosure of directory information must contact the Registrar's Office to complete a Privacy-Nondisclosure Request Form.

Student Right to Know and Completion Rates

Federal law requires MTI to disclose information on its graduation or completion rates for students who enroll at MTI. Student Right to Know and Completion Rates are posted on the MTI website.

Student Communications

MTI's student email accounts are the "official" means of communication with students by MTI staff. Students are expected to check their official MTI email accounts each day for messages from MTI administration and faculty. Students are responsible for the information shared or requested in the email notification.

Graduation Requirements

Degree, Diploma and Certificate Requirements

Mitchell Technical Institute awards Certificates, Diplomas and Associate of Applied Science Degrees. Specific program requirements and course sequences are described by program. It is the responsibility of each student to monitor his or her academic progress. The student is expected to know the graduation requirements pertinent to his or her program, to be cognizant of his or her grade point average, to make appropriate elective course selections and to add/drop courses to best facilitate attainment of his or her educational goals. To assist in making these important decisions, students should consult with their academic advisors. To earn a Certificate, Diploma or AAS Degree, students must:

1. Complete the requirements of each program as specified in the current MTI General Catalog.
2. Achieve a minimum cumulative grade point average of 2.00 (C).
3. Have on file an official high school transcript or high school equivalency certificate.
4. File a Request to Graduate form with the Registrar's Office.
5. Complete the General Education requirements as defined by the program of study's curriculum:
 - A. Certificate
No general education requirements
 - B. Diploma Requirements
 1. 3.0 credits in communications
 2. 3.0 credits in computer literacy
 3. 3.0 credits in mathematics
 4. 1.0 credit in Student Success
 - C. Associate of Applied Science Degree Requirements
 1. 3.0 credits in communications
 2. 3.0 credits in computer literacy
 3. 3.0 credits in mathematics
 4. 3.0 credits in behavioral science
 5. 3.0 credits in social science
 6. 1.0 credit in Student Success
6. Complete at least 25% of coursework at MTI.

Students are required to fulfill all financial obligations to MTI. Certificates, diplomas and transcripts will be held until financial obligations are fulfilled.

Students are required to comply with the policies and regulations of the MTI Catalog and the Student Handbook during their enrollment at MTI.

Conferring of Degrees, Diplomas and Certificates

Degrees, diplomas and certificates are officially conferred at the conclusion of each semester in December, May and August. Public commencement exercises are held only in the spring.

Students who plan to receive a certificate, diploma or degree must apply for graduation by filing a Request to Graduate form with the Registrar's Office. The form must be received in the Registrar's Office prior to registration of the student's final spring semester. It is the student's responsibility to confirm that all graduation requirements, including required coursework, are met.

To be eligible to participate in the annual spring graduation ceremony, students must be able to complete their remaining graduation requirements by the end of the subsequent semester.

A note about posthumous awards: MTI awards posthumous degrees to deceased students who were currently enrolled at the time of death and who completed 50% of their program.

Honors Designation

A student will be granted High Honors by maintaining a 3.75 or higher cumulative grade point average. A student will be granted Honors by maintaining a 3.50 - 3.74 cumulative grade point average. An honors designation for the purpose of commencement is calculated using a student's cumulative GPA through the fall semester prior to the graduation ceremony.

AAS degree students who earn High Honors or Honors will be provided with a gold or silver cord to wear with their graduation gown at the commencement ceremony.

Upgrading a Diploma to an AAS Degree

MTI may grant the AAS degree to students who have received a diploma in a two-year program from MTI within the last seven years and who have subsequently completed the technical and AAS requirements in their respective field. The following guidelines will be used to determine an applicant's eligibility to receive the AAS degree:

1. Courses counted toward the degree shall have been taken within the seven years prior to granting the degree, or there is satisfactory evidence that the applicant's respective knowledge and skills fulfill current standards and requirements.
2. The respective department(s) shall review an applicant's transcript and recommend approval for the AAS degree.
3. The student has met the additional general education requirements necessary to earn an AAS degree for a chosen major.
4. Students must complete a Request to Graduate form.

The student will be charged a \$50 records processing fee. ***Please note: At least 75% of the general education courses required for the degree upgrade must be transcribed credit and not life experience.***

Replacement Diplomas

Replacement diplomas can be issued at a cost of \$30 each. Allow two weeks for reprinting.

General Education

General Education is that part of our students' education that goes beyond learning technical skills and allows students to become well-rounded, higher-functioning citizens of the world. As an institute of higher learning, we are committed to the inherent value of general education and know that critical thinking ability, communication skills, information literacy, math and problem solving skills and more, are crucial for our graduates' success in their future technical careers. We also recognize that an associate's degree or diploma at Mitchell Technical Institute must mean something more than job skills. Our students must become lifelong learners with the ability to adapt to a changing world and ever-increasing job expectations. To this end, general education learning outcomes that all MTI graduates should possess have been identified as follows:

MTI General Education Learning Outcomes

Math

Students will understand and apply essential mathematical processes and analysis.

- Perform computations using appropriate methods and/or technologies
- Demonstrate knowledge and application of measurement
- Demonstrate knowledge and application of formulas
- Use math processes to solve problems
- Apply problem-solving steps

Human Relations

Students will apply human relationship skills to work successfully in a diverse society.

- Demonstrate awareness and respect for people and their differences
- Ask for and listen to others' opinions and solutions
- Identify individual strengths and challenges in occupational relationships
- Apply team skills to group projects
- Demonstrate conflict resolution techniques
- Understand the benefits of community involvement and civic responsibility

Technology

Students will use computer technology to access, organize and communicate information.

- Use word processing, e-mail and presentation software to effectively and professionally communicate information
- Create and manage workbooks using spreadsheet software
- Access and manipulate data using database software
- Use electronic resources to conduct research

English

Students will communicate effectively with others using a variety of contexts and formats.

- Use standard English spelling, mechanics, grammar and structure
- Create written communication which clearly, concisely and accurately expresses ideas and conveys needs appropriate to the audience
- Participate effectively in groups by demonstrating the ability to speak, listen, respond and interpret
- Speak effectively, both formally and informally, in a variety of contexts
- Conduct, examine, interpret and document research responsibly

Both diploma and Associate of Applied Science degree candidates at MTI are required to successfully complete general education courses as designated by the technical department. NOTE: Students should be aware that most general education courses are not transferable to South Dakota universities. Transferable courses are available through enrollment in select courses offered through an agreement with Dakota State University and will be designated on your official transcript with a "T". Please see your advisor or the registrar for more details.

Student Success Course

The Student Success Course provides a foundation for a successful transition to higher education and the world of work. This course emphasizes goal setting, critical thinking skills, learning strategies, and personal qualities essential to both academic and career success. Information about college procedures, resources and services that relate to student success are discussed. Additional topics explore life management issues such as self-esteem, motivation, goal-setting, diversity, and personal finance.

Diploma Track

Students pursuing a diploma are required to complete a minimum of 10 credits in general education.

		Computer Literacy Elective.....	3
		Communications Elective	3
		Math Elective	3
SSS	100	Student Success	1

Individual departments may require additional credits. See individual program descriptions for details.

AAS Degree

Students pursuing the Associate of Applied Science degree are required to complete a minimum of 16 credits in general education in six subject areas. Individual departments may require additional or specific credits. See program descriptions for options.

Communications (3 credits required)

COMM	151	Mass Communication & Culture	3
COMM	210	Interpersonal Communication.....	3
ENGL	101	English Composition	3
ENGL	110	Workplace Communications	3

Math (3 credits required)

MATH	101	Intermediate Algebra	3
MATH	102	College Algebra	3
MATH	104	Technical Math	3
MATH	130	Business Math	3

Computer Literacy (3 credits required)

CIS	105	Computer Concepts	3
EC	138	CCNA I: Intro to Networking.....	3
EC	167	IT Essentials.....	3

Behavioral Science (3 credits required)

COMM	210	Interpersonal Communication.....	3
PSYC	100	Introduction to Psychology	3
PSYC	101	General Psychology.....	3

Social Science (3 credits required)

COMM	151	Mass Communication & Culture	3
CHRD	104	Social Diversity	3

Student Success (1 credit required)

SSS	100	Student Success	1
SSS	101	Online Seminar I	1

Preparatory Courses

Some students may be required, according to placement test scores, to complete review/preparatory courses to help strengthen their skills and prepare them for success in diploma or degree courses.

1. Students with a low placement test score in math will be required to complete:

MATH 091 Basic Algebra. (2 credits)
before entering MATH 101 or MATH 104.

2. Students with low placement test scores in reading or writing will be required to complete:

ENGL 098 Basic Writing..... (2 credits)
before entering their ENGL 101 or ENGL 110.



Mitchell Technical Institute

The best jobs start here!



Programs Offered

Program Offerings

Accounting/Business Management

MTI offers options for business degrees which lead to the completion of an Associate of Applied Science degree. In the first year, all students take a core group of courses that prepares them to make the decision to take the Accounting or Business Management emphasis their second year.

Accounting is the "language" of business. Accountants and bookkeepers continue to be in high demand; the Accounting emphasis will provide the graduate with many options.

The Business Management emphasis offers broad training in key business areas that employers want such as sales, advertising, marketing, insurance, finance and human resource management.

Note: Students are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: AAS Degree

Core Curriculum (Both Emphases)

First Semester		Semester Credits
ACCT	110 Principles of Accounting I	4
BUS	101 Introduction to Business	3
BUS	122 E-Commerce	3
CIS	105 Complete Computer Concepts	3
MATH	130 Business Math	3
SSS	100 Student Success	1
		17

Second Semester		Semester Credits
ACCT	111 Principles of Accounting II	4
BUS	120 Principles of Marketing	3
BUS	140 Business Law	3
	Behavioral Science Elective	3
	Communications Elective	3
		16

Accounting

Third Semester		Semester Credits
ACCT	212 Intermediate Accounting I	4
ACCT	214 Cost Accounting I	3
ACCT	216 Governmental Reporting	2
ACCT	218 Tax Accounting I	3
BUS	216 Spreadsheet Concepts & Applications	3
	Social Science Elective	3
		18

Fourth Semester		Semester Credits
ACCT	213 Intermediate Accounting II	4
ACCT	215 Cost Accounting II	3
ACCT	217 Government & Nonprofit Accounting	3
ACCT	219 Tax Software Applications	1
ACCT	221 Accounting Software Applications	2
BUS	217 Database Concepts & Applications	3
or		
ACCT	290 Internship	3
		16

Total Credits Required to Graduate: 67
Award: AAS Degree

Business Management

Third Semester		Semester Credits
BUS	204 Customer Service	3
BUS	210 Sales & Advertising	3
BUS	214 Principles of Insurance	2
BUS	216 Spreadsheet Concepts & Applications	3
BUS	240 Consumer Behavior	2
BUS	212 Principles of Management	3
or		
BUS	170 Entrepreneurship & Small Bus. Mgmt	4
	Social Science Elective	3
		19/20

Fourth Semester		Semester Credits
ACCT	221 Accounting Software Applications	2
BUS	217 Database Concepts & Applications	3
BUS	218 Intro to Human Resource Management	3
BUS	238 Finance	3
BUS	246 Social Media	3
or		
CSS	170 Desktop Publishing	3
BUS	290 Internship	3
		17

Total Credits Required to Graduate: 69
Award: AAS Degree

Ag Business

The business of agriculture is varied and complex. Mitchell Tech's highly qualified instructional staff and reputable program will prepare graduates for a variety of ag business careers.

Beginning with basics like farm accounting and commodity marketing, students will also be exposed to fundamentals of animal science and agronomy in order to learn how those areas relate to the financial bottom line.

During the second year, students will take courses in management, sales and service, ag law, finance, insurance and e-commerce. A variety of guest speakers, case studies, and hands-on activities will reinforce concepts and prepare students for many occupational options.

Graduates will find a wide variety of employment opportunities in areas like management, sales, claims processing, analysis, grain management, lending, marketing or many other areas.

Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program.

MTI recommends that applicants to the Ag Business program obtain a physical examination for their safety and protection.

Please Note:

- **Students enrolled must possess a Class A CDL license before the end of the 10th day of their first semester of enrollment or be registered for TRAN 100 during their first semester.**
- **Students must pass the Commercial Applicator's License exam in order to graduate.**
- **Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.**
- **Students are required to achieve a grade of 2.0 (C) in technical courses in order to satisfy graduation requirements.**
- **Students are required to complete one internship to satisfy graduation requirements.**

Award: AAS Degree

First Semester		Semester Credits
AGT	101	Animal Science I 3
AGT	102	Weeds and Herbicides 3
AGT	104	Ag Chemicals 2
AGT	120	Soil Science I 3
TRAN	100	Industrial Transportation/CDL 1
CIS	105	Complete Computer Concepts 3
		Math Elective 3
SSS	100	Student Success 1
		19

Second Semester		Semester Credits
AGT	110	Crop Science I 3
AGT	112	Fertilizers 3
AGT	160	Commodity Marketing 3
AGT	214	Ag Law 3
CPR	100	First Aid, CPR & AED 0.5
Choose one 6-credits option:		
AGT	190	Internship I 6
or		
AGT	180	Ag Production Management 2
AGT	213	Welding & Fabrication 2
AGT	223	Basic Building Principles/Electrical 2
		18.5

Third Semester		Semester Credits
AGT	103	Machinery Management 2
AGT	211	Farm Accounting 3
AGT	260	Advanced Commodity Marketing 3
AGT	261	Ag Sales & Service 3
AGT	291	Land Management 1
or		
AGT	295	Beef Management 1
		Communications Elective 3
		Behavioral Science Elective 3
		18

Fourth Semester		Semester Credits
AGT	215	Ag Finances 3
AGT	218	Principles of Ag Business 3
AGT	263	Fundamentals of Insurance 2
BUS	122	E-Commerce 3
		Social Science Elective 3
AGT	290	Internship II 6
		20

Total Credits Required to Graduate: 75.5

Agronomy

Agronomists are individuals who are experts in planting, cultivating and harvesting food for an ever-expanding global market. Mitchell Tech's program has an excellent reputation and will provide graduates with many career options.

Students will learn about different methods to increase soil organic matter and improve the overall soil health. They will study crop growth stages for the top four crops produced in South Dakota: corn, soybeans, small grains, and alfalfa, and discuss management options available at certain crop stages. Disease and insect identification are also key factors involved with today's crop production efforts. Weeds that are common to this region will be observed and control strategies will be discussed. Crops also depend on a balanced fertilizer source; students will look at soil test and tissue test results and help make sound environmental recommendations.

Students will also gain experience with ag chemicals and will test for their chemical applicator's license. Hands-on activities with machinery, small engines and other areas that will expand the student's experience will be integrated into a variety of courses.

A featured component of this program is the MTI Land Lab. The program farms 85 acres of land near Mitchell. MTI Ag students and instructors manage all aspects of crop production including government programs. The land lab is used in conjunction with many of the production and agri-business classes and gives students exposure to precision technologies including auto-steer, geo-referenced data management and variable

rate technologies. Students gain experience in all areas of the operation: budgeting, planning, planting, spraying, fertilizing, harvesting and marketing.

Graduates will find work in all areas of agriculture from production to sales and service, agronomy, working with cooperatives or in management.

Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program.

MTI recommends that applicants to the Agronomy program obtain a physical examination for their safety and protection.

Please Note:

- **Students enrolled must possess a Class A CDL license before the end of the 10th day of their first semester of enrollment or be registered for TRAN 100 during their first semester.**
- **Students must pass the Commercial Applicator's License exam in order to graduate.**
- **Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.**
- **Students are required to achieve a grade of 2.0 (C) in technical courses in order to satisfy graduation requirements.**
- **Students are required to complete one internship to satisfy graduation requirements.**

Award: AAS Degree

First Semester		Semester Credits
AGT	101	Animal Science I 3
AGT	102	Weeds and Herbicides 3
AGT	104	Ag Chemicals 2
AGT	120	Soil Science I 3
TRAN	100	Industrial Transportation/CDL 1
CIS	105	Complete Computer Concepts 3
		Math Elective 3
SSS	100	Student Success 1
		19

Second Semester		Semester Credits
AGT	110	Crop Science I 3
AGT	112	Fertilizers 3
AGT	160	Commodity Marketing 3
AGT	214	Ag Law 3
CPR	100	First Aid, CPR & AED 0.5
Choose one 6-credits option:		
AGT	190	Internship I 6
or		
AGT	180	Ag Production Management 2
AGT	213	Welding & Fabrication 2
AGT	223	Basic Building Principles/Electrical 2
		18.5

Third Semester		Semester Credits
AGT	103	Machinery Management 2
AGT	211	Farm Accounting 3
AGT	212	Ag Chemical Equipment 2
AGT	220	Soil Science II 2
AGT	261	Ag Sales & Service 3
AGT	291	Land Management 1
		Communications Elective 3
		Behavioral Science Elective 3
		19

Fourth Semester		Semester Credits
AGT	210	Crop Science II 3
AGT	263	Fundamentals of Insurance 2
AGT	158	Small Engines 3
PAT	102	Principles of GPS/GIS 2
		Social Science Elective 3
Choose one 6-credits option:		
AGT	290	Internship II 6
or		
AGT	180	Ag Production Management 2
AGT	213	Welding & Fabrication 2
AGT	223	Basic Building Principles/Electrical 2
		19

Total Credits Required to Graduate: 75.5

Animal Science

Producers whose livelihoods depend upon the production of animals that are safe and healthy for consumption are a vital part of today's modern food culture. Students who study Animal Science will learn the most efficient ways to breed and manage herds to ensure the sustainability of the animals and the environment.

MTI's highly qualified instructors, including a Doctor of Veterinary Medicine, will teach a variety of classes including management, breeding, genetics, nutrition, disease, growth and feed stuff production. Students will also become proficient in related areas like accounting, ag law, insurance, finance and other areas that will help them succeed.

Another feature of this program is an animal lab available to students. This working beef production facility allows students access to cattle from birth to sale and helps students learn not only the hands-on labor needed to maintain a beef herd, but also the marketing process for making a profit.

Graduates will find work in many areas of agriculture including farms, ranches, feedlots, genetics and breeding, sales, marketing and livestock handling.

Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program.

MTI recommends that applicants to the Animal Science program obtain a physical examination for their safety and protection.

Please Note:

- **Students enrolled must possess a Class A CDL license before the end of the 10th day of their first semester of enrollment or be registered for TRAN 100 during their first semester.**
- **Students must pass the Commercial Applicator's License exam in order to graduate.**
- **Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.**
- **Students are required to achieve a grade of 2.0 (C) in technical courses in order to satisfy graduation requirements.**
- **Students are required to complete one internship to satisfy graduation requirements.**

Award: AAS Degree

First Semester		Semester Credits
AGT	101	Animal Science I..... 3
AGT	102	Weeds and Herbicides 3
AGT	104	Ag Chemicals..... 2
AGT	120	Soil Science I..... 3
TRAN	100	Industrial Transportation/CDL..... 1
CIS	105	Complete Computer Concepts 3
		Math Elective 3
SSS	100	Student Success 1
		19

Second Semester		Semester Credits
AGT	110	Crop Science I 3
AGT	112	Fertilizers..... 3
AGT	160	Commodity Marketing..... 3
AGT	214	Ag Law 3
CPR	100	First Aid, CPR & AED.....0.5
Choose one 6-credits option:		
AGT	190	Internship I 6
or		
AGT	180	Ag Production Management 2
AGT	213	Welding & Fabrication..... 2
AGT	223	Basic Building Principles/Electrical..... 2
		18.5

Third Semester		Semester Credits
AGT	211	Farm Accounting 3
AGT	240	Livestock Reproduction 3
AGT	242	Livestock Diseases 3
AGT	245	Animal Nutrition..... 2
AGT	295	Beef Management 1
		Communications Elective 3
		Behavioral Science Elective..... 3
		18

Fourth Semester		Semester Credits
AGT	130	Livestock Selection 2
AGT	215	Ag Finances 3
AGT	241	Feed Utilization 2
AGT	263	Fundamentals of Insurance 2
AGT	296	Calving Management 1
		Social Science Elective 3
Choose one 6-credits option:		
AGT	290	Internship II..... 6
or		
AGT	180	Ag Production Management 2
AGT	213	Welding & Fabrication..... 2
AGT	223	Basic Building Principles/Electrical..... 2
		19

Total Credits Required to Graduate: 74.5

Architectural Design & Building Construction

Beginning with a firm foundation in drafting with instruments and followed with an introduction to computer-aided design (CAD), students learn to conceptualize the building process. Using the latest construction methods and under close supervision, they construct a residence inside the MTI building lab where the weather is always nice.

In the second year of the program, students working in construction units build a student-designed house in the Mitchell community. Students learn about concrete work as they construct the foundation, rough-finish a basement and finish a three-bedroom home.

Additionally, students will be exposed to many techniques and skills required in the area of commercial construction: steel, welding, commercial construction equipment operation and more. Valuable experience will be gained during a commercial construction internship.

Graduates from this program find employment with lumberyards, building contractors, architectural firms and commercial construction companies. Their skills in CAD, carpentry, surveying, estimating, cabinetry, commercial construction and green building technologies make the students who graduate from this program valuable employees in the building trades industry.



What makes this program special?

- Our instructors are Certified Green Professionals and Home Energy Raters
- We build to Energy Star specifications
- Our houses are built using Residential Energy Services Network & Home Energy Rating Standards of Practice (RESNET HERs)
- We focus on energy efficient building practices
- Our students are involved with the NAHB (student chapter)
- South Dakota's only commercial construction program
- Bottom line - we are teaching students how to build the homes of the future!

Program Requirement: Successful completion of all 100 level technical courses is required to continue into advanced 200 level courses.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: AAS Degree

First Semester		Semester Credits
AD	101	Principles of Drafting I 2
AD	151	Architectural Drafting Lab I..... 4
BC	121	Principles of Building Construction I 4
BC	151	Building Construction Lab I 4
		Math Elective 3
SSS	100	Student Success 1
		18

Second Semester		Semester Credits
AD	102	Principles of Drafting II/CAD..... 2
AD	152	Architectural Drafting Lab II/CAD..... 3
BC	124	Principles of Green Building..... 2
BC	130	Cabinetry..... 2
BC	152	Building Construction Lab II..... 4
BC	162	Post-Frame Structures..... 1
CPR	100	First Aid, CPR & AED.....0.5
OSHA	101	OSHA 10 Training - Construction 1
CIS	105	Complete Computer Concepts 3
		18.5

Third Semester (Summer)		Semester Credits
BC	190	Commercial Construction Internship 6

Fourth Semester (Fall)		Semester Credits
AD	221	Adv. Building Principles 2
BC	222	Construction Equipment 1
BC	251	Building Construction Lab III 7
BC	270	Principles of Contracting..... 3
		Communications Elective 3
		Social Science Elective 3
		19

Fifth Semester (Spring)		Semester Credits
AD	242	Principles of Commercial Design 2
AD	272	Commercial Construction Documents 1
BC	252	Building Construction Lab IV 6
BC	261	Commercial Construction Lab 2
BC	282	Welding 2
		Behavioral Science Elective..... 3
		16

Total Credits Required to Graduate: 77.5

Automation Controls/SCADA

Supervisory Control & Data Acquisition, known in the industry as SCADA, is emerging as one of the fastest expanding areas of industry today. This program teaches students to use computers to collect management data and to design, build and repair automated systems. Industries are placing greater emphasis on remotely controlling switching devices, gathering accurate inventory data, managing the operation of electrical devices, measuring and metering electrical systems and automating routine tasks.

The successful student in this program will demonstrate a variety of skills and abilities including reasoning, both inductive and deductive; research skills; visual color discrimination; communication through various means like telephone, written documents, email, in person; repair and maintain electronic equipment; and keep up to date with new knowledge.

Award: AAS Degree

First Semester (Fall)		Semester Credits
EC	112	Electronics Theory 3
EC	121	DC/AC Circuit 3
EC	151	Electronics Lab I 3
EC	162	Electronics Math/Digital..... 2
EC	167	IT Essentials..... 3
OSHA	100	OSHA 10 Training 1
SSS	100	Student Success 1
		16

Second Semester (Spring)		Semester Credits
EC	138	CCNA I: Introduction to Networking 3
EC	142	Industrial Power Electronics 3
EC	210	Intro to VoIP 3
SD	136	Programming for SCADA 2
SD	157	SCADA Electronics Lab 3
		Communications Elective 3
		17

Third Semester (Summer)		Semester Credits
SD	120	Intro to Industrial Motor Controls..... 3
SD	159	Programmable Logic Controllers 3
SD	160	Industrial Wiring 3
		Math Elective 3
		12

SCADA technicians will find employment in electric power utilities, gas companies, water systems, security systems and in industrial applications. Graduates will install and maintain remote switches and communication devices, or operate computer networks to control remote switches.

Students may elect to enroll in a third-year Automated Engineering option and earn a second AAS degree with one additional year of coursework.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Fourth Semester (Fall)		Semester Credits
SD	225	Intro to SCADA Software 4
SD	229	Networking Concepts..... 3
SD	230	Intro to Visual Basic 3
SD	259	Advanced Programmable Logic Controllers.. 3
EC	180	Data Cabling..... 3
		Social Science Elective 3
		19

Fifth Semester (Spring)		Semester Credits
SD	205	Process Controls 3
SD	239	Advanced Industrial Networking 3
SD	270	SCADA Testing & Control Lab..... 7
		Behavioral Science Elective..... 3
		16

Total Credits Required to Graduate: 80

Optional Third-Year Automated Engineering AAS:

Sixth Semester (Fall)		Semester Credits
WMT	201	Quality & Productivity Improvement..... 2
WMT	230	Welding Robotic Lab..... 3
WMT	231	Manual Machining Lab..... 3
WMT	240	Manufacturing Programming 3

Seventh Semester (Spring)		Semester Credits
WMT	250	Laser Cutting Technology 3
WMT	251	CNC Machining Station Lab 3
WMT	260	Adv. Machining 4
CPR	100	First Aid, CPR & AED..... 0.5

ButlerEDGE

Students will get a head start in a career as a Service Technician through the ButlerEdge Ag Technician program. Students will receive state-of-the-art training on various equipment and systems while earning an Associate of Applied Science degree.

ButlerEdge, the AGCO Dealer Service Technology Program, is designed to develop technically competent entry-level Service Technicians. Students receive up-to-date technical training on AGCO equipment and systems through a combination of classroom instruction, hands-on laboratory instruction and an internship at Butler Machinery. Work experience at the dealership is structured to relate to the most recent classroom/lab subjects covered at school. Upon completion of the program, graduates earn an Associate of Applied Science (AAS) degree and a full time job is reserved for them upon graduation.

ButlerEdge is divided into nine terms, each approximately eight weeks in length. Students complete the 1st, 3rd, 5th, 7th and 9th terms on campus at MTI. They complete the 2nd, 4th, 6th and 8th terms interning at a Butler Machinery location. During these paid internships, students will earn over \$17.00 per hour with

a mandatory minimum of 1,280 internship hours. Students are responsible for paying the costs of tuition, housing, and tools.

Butler Machinery hires many graduates of technical schools to begin working in service departments across the upper midwest. Most of the company's 400+ service technicians began employment after completing their education at a tech school. In many situations, Butler Machinery promotes from within the company.

Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program.

Note: Several criteria apply to students in this program including screening and acceptance by Butler Machinery. Applicants must complete the ACT test and pass a pre-employment drug screen. See the Admissions office for more details.

Award: AAS Degree

First Semester (Fall)		Semester Credits
BEP	105	AGCO Service Center Fundamentals 2
BEP	120	Diesel Engine & Control Systems 3
BEP	150	Internship I 4
CPR	100	First Aid, CPR & AED 0.5
HAZ	100	Hazardous Materials Safety 0.5
CIS	105	Complete Computer Concepts 3
		Math Elective 3
		16

Second Semester (Spring)		Semester Credits
BEP	107	Fundamentals of Hydraulics 2
BEP	121	AGCO/SISU Diesel Engines & Control Sys. 3
BEP	130	Electrical/Electronic Systems 2
BEP	151	Internship II 4
BEP	161	Air Conditioning Service Fundamentals 2
		Social Science Elective 3
		16

Third Semester (Summer)		Semester Credits
BEP	200	Powertrain & Drive Systems 3
BEP	240	Fund. of AGCO Harvesting Equipment 3
BEP	243	Fund. of AGCO Seeding Equipment 3
		Communications Elective 3
TRAN	100	Industrial Transportation/CDL 1
		13

Fourth Semester (Fall)		Semester Credits
BEP	210	AGCO Adv. Fluid Power Dynamics 2
BEP	212	Fund. of AGCO Application Equipment 2
BEP	221	AGCO Equipment Diagnostics 3
BEP	250	Internship III 4
PAT	102	Principles of GPS/GIS 2
		Behavioral Science Elective 3
		16

Fifth Semester (Spring)		Semester Credits
BEP	206	TOP TECH Certification/AED Certification 1
BEP	213	Welding & Metallurgy 2
BEP	231	AGCO Adv. Electrical/Electronic Diagnostics 3
BEP	241	Tractor Performance, Tire & Track Systems 3
BEP	245	Fund. of AGCO Hay Equipment 3
BEP	251	Internship IV 4
		16

Total Credits Required to Graduate: 77

Culinary Academy

The Culinary Academy of South Dakota has a long and honored tradition in the upper Midwest. Placement opportunities for graduates have been excellent. This program combines traditional campus instruction with apprenticeship training in other South Dakota communities including major convention centers and hotels.

Learning to cook in the MTI kitchens, students master the techniques of food preparation, sanitation and service in a large operation. Fulfilling all the positions in a modern food service operation, students move easily from cook to waiter, learning as they work. The program provides daily food service to MTI students, staff and guests, short order service and elegant Oak Room dining in MTI's prestigious on-campus restaurant.

After two semesters on campus, students are prepared to enter the food service industry with a one-year diploma. Students also have the option of enrolling in a second year and completing an Associate of Applied Science (AAS) degree. The two-year option also requires an internship experience. AAS graduates have experience in cooking, but equally important, are prepared for management positions in the food service industry.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Please Note: This program requires students to be able to perform several physical tasks including lifting 50 pounds; standing for a minimum of 90 minutes at a time; ability to stoop, bend and stretch; to read small print on order tickets, recipes and labels; and to withstand very hot and cold working conditions.

Award: One-year Diploma or AAS Degree

First Semester (Fall)			Semester Credits
CA	105	Intro to Commercial Kitchen	1
CA	107	Customer Service	2
CA	110	Mise en Place	1
CA	134	Professional Baking Concepts	3
CA	140	Fund. of Professional Cooking	4
CA	145	ServSafe	1
CA	147	Customer Service Lab	2
CA	165	Culinary Math	2
CIS	105	Complete Computer Concepts	3
SSS	100	Student Success	1
			20

Second Semester			Semester Credits
CA	135	Breakfast Bistro	2
CA	150	Banquet Quantity Food Production	3
CA	155	Baking Applications	3
CA	166	Front-of-House Operations	2
CA	188	Hospitality Management	3
		Communication Elective	3
		Math Elective	3
			19

Third Semester (Summer)			Semester Credits
CA	190	Internship	6

Fourth Semester (Fall)			Semester Credits
CA	200	Nutrition	2
CA	210	Hospitality Accounting	3
CA	212	Bake Shop	2
CA	215	Culinary Classics	2
CA	220	Introduction to Sous Chef	2
CA	231	International Cuisine	2
		Behavioral Science Elective	3
			16

Fifth Semester (Spring)			Semester Credits
CA	240	Menu Planning	1
CA	245	Modern Cuisine	3
CA	255	Practical Supervision	3
CA	260	Restaurant Concepts	2
CA	265	Culinary Exploration Lab	3
		Social Science Elective	3
			15

Total Credits Required to Graduate: 39 (Diploma)

Total Credits Required to Graduate: 76 (AAS)

The MTI Culinary Academy is accredited by the American Culinary Federation, Educational Foundation, Accreditation Commission (ACFEFAC):

American Culinary Federation
180 Center Place Way
St. Augustine, FL 32095
(800) 624-9458
www.acfcchefs.org



Diesel Power Technology

Diesel Power Technology: a great way to get your hands on some of today's biggest, most automated machinery used in the agriculture industry! Students will take classes in electronic controls, GPS, introductory diesel, drive trains, hydraulics, electrical systems, air conditioning systems, harvesting equipment, service management and more to learn how to help farmers increase productivity and be more profitable.

Manufacturers are incorporating more and more technology into their new products. At the local dealer level, where equipment is sold and serviced, the demand for technicians who understand this new technology and have the ability to repair it in a cost-effective timely manner, is at an all-time high. This program will produce technicians who can diagnose mechanical and electronic problems or hydraulic failures in the complex modern equipment used on farms and in fields.

Students receive hands-on training and learn applied skills such as repair, diagnostic and troubleshooting skills that are critical for this industry. As part of the program, students will also complete an internship at an ag power dealership or job site related to the program.

Career opportunities include positions like service technician, parts person, parts manager, service/warranty writer, or customer service/sales representative at an agriculture power equipment dealership.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Award: AAS Degree

First Semester		Semester Credits
DPT	120	Diesel Engine & Control Systems 3
DPT	130	Electrical/Electronic Systems 2
OPRV	105	Service Center Fundamentals 2
OPRV	120	Basic Engine Theory & Operation 2
OPRV	121	Basic 2 & 4 Cycle Engine Lab..... 2
OSHA	100	OSHA 10 Training-General. 1
CIS	105	Complete Computer Concepts 3
SSS	100	Student Success 1
		Math Elective 3
		19

Second Semester		Semester Credits
DPT	107	Intro to Hydraulics 2
DPT	115	Intro to Powertrain..... 2
DPT	121	Adv. Diesel Engine & Control Systems..... 3
DPT	161	Air Conditioning Service Fundamentals..... 2
OPRV	150	Handheld Power Equipment 3
OPRV	280	Successful Service Management..... 1
AGT	103	Machinery Management..... 2
		Social Science Elective 3
		18

Third Semester (Summer)		Semester Credits
DPT	290	Internship 6

Fourth Semester (Fall)		Semester Credits
DPT	215	Adv. Powertrain & Drive Systems 2
AGT	212	Ag Chemical Equipment 2
PAT	102	Principles of GPS/GIS..... 2
		Communications Elective 3
		Behavioral Science Elective..... 3
Electives (Choose two or three)		
DPT	240	Harvesting Equipment Basics..... 3
DPT	241	Tractor Performance & Setup..... 2
DPT	242	Sales & Marketing: Parts & Aftermarket 2
		16

Fifth Semester (Spring)		Semester Credits
DPT	201	Guidance, Steering & Variable Rate Oper. 3
DPT	210	Adv. Fluid Power Dynamics & Diagnostics.... 3
DPT	221	Ag Equipment Diagnostics 3
DPT	231	Adv. Electrical/Electronics Diagnostics..... 3
AGT	213	Welding & Fabrication..... 2
Electives (Choose one or two)		
DPT	243	Seeding Equipment Fundamentals..... 3
DPT	245	Hay Equipment Fundamentals 3
		17

Total Credits Required to Graduate: 77

Electrical Construction & Maintenance

The Electrical Construction and Maintenance program is a sequence of courses designed to provide basic training in maintenance and new construction wiring—in both residential and commercial buildings. The program emphasizes a combination of theory and practical application necessary for successful employment. Additional coursework includes fiber optic and data cabling as well as programmable logic controls.

The program begins with a review of basic math as it relates to the electrical trade and an introduction to hand tools, materials, basic electrical resistive theory, wire sizing, circuit construction and troubleshooting. The program continues with basic through advanced motor controls, motor theory and maintenance, installation and maintenance of equipment, blueprint reading, estimating, electrical codes and instruction in job-seeking skills.

The successful student in this program will demonstrate a variety of skills and abilities including manual dexterity, arm-hand steadiness and multi-limb coordination; visual color discrimination and near vision; reasoning, information ordering

and problem-solving; and communication with supervisors, peers and subordinates. In addition, students must be able to perform general physical activities like climbing, lifting, walking, stooping and handling materials and must be able to climb a 6-foot ladder.

Apprentice electrical jobs in residential, commercial and industrial areas are open to MTI graduates. Positions are available with electrical contractors and maintenance companies and with regional substations and utility companies. Incoming students are licensed as apprentice electricians in South Dakota. Upon completion of the Electrical Construction and Maintenance program, an MTI graduate receives 2000 hours towards certification as a journeyman with a South Dakota electrician's license.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: Two-Year Diploma or AAS Degree

First Semester		Semester Credits
ECM	101	Electrical Fundamentals..... 4
ECM	121	Electrical Drawing 4
ECM	151	Basic Electrical Lab..... 5
OSHA	101	OSHA 10 Training - Construction 1
SSS	100	Student Success 1
		Math Elective 3
		Social Science Elective (AAS) 3
		21

Second Semester		Semester Credits
ECM	103	Designing Electrical Systems 3
ECM	122	Residential Blueprint & Code 3
ECM	149	Basic Conduit Bending 2
ECM	157	Wiring Lab..... 4
CIS	105	Complete Computer Concepts 3
		Behavioral Science Elective (AAS)..... 3
		18

Third Semester		Semester Credits
ECM	211	Power Distribution.....1.5
ECM	231	Electronic Circuits..... 2
ECM	251	Commercial and Industrial Wiring Lab 4
ECM	252	Industrial Controls 3
ECM	255	Control Lab I.....1.5
ECM	259	Programmable Logic Controls..... 3
		Communications Elective 3
		18

Fourth Semester		Semester Credits
ECM	202	Motor Theory & Maintenance 2
ECM	221	Commercial Blueprint Reading2.5
ECM	235	Structured Cabling..... 4
ECM	244	VFD/Motor Drives..... 1
ECM	253	Advanced Control Systems.....2.5
ECM	257	Advanced Control Lab II..... 2
ECM	261	Adv. Programmable Logic Controls3.5
CPR	100	First Aid, CPR & AED.....0.5
		18

Total Credits Required to Graduate: 75 (AAS)

Total Credits Required to Graduate: 69 (Diploma)

Third Year Option: Students who wish to earn a second AAS degree in Automation Controls/SCADA will be required to take additional coursework. See the following page for details.

Electrical Construction & Maintenance SCADA Option

Students enrolled in Electrical Construction & Maintenance who wish to earn a second AAS degree in Automation Controls/SCADA will be required to take additional coursework.

Below is a suggested curriculum incorporating all of the required courses for a double AAS degree.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: Double AAS Degree

First Semester (Fall)			Semester Credits
ECM	101	Electrical Fundamentals	4
ECM	121	Electrical Drawing	4
ECM	151	Basic Electrical Lab	5
OSHA	101	OSHA 10 Training - Construction	1
SSS	100	Student Success	1
		Math Elective	3
		Social Science Elective	3
			21

Second Semester (Spring)			Semester Credits
ECM	103	Designing Electrical Systems	3
ECM	122	Residential Blueprint & Code	3
ECM	149	Basic Conduit Bending	2
ECM	157	Wiring Lab	4
EC	142	Industrial Power Electronics	3
		Behavioral Science Elective	3
			18

Third Semester (Fall)			Semester Credits
ECM	211	Power Distribution	1.5
ECM	231	Electronic Circuits	2
ECM	251	Commercial and Industrial Wiring Lab	4
ECM	252	Industrial Controls	3
ECM	255	Control Lab I	1.5
ECM	259	Programmable Logic Controls	3
EC	167	IT Essentials	3
		Communications Elective	3
			21

Fourth Semester (Spring)			Semester Credits
ECM	202	Motor Theory & Maintenance	2
ECM	221	Commercial Blueprint Reading	2.5
ECM	235	Structured Cabling	4
ECM	244	VFD/Motor Drives	1
ECM	253	Advanced Control Systems	2.5
ECM	257	Advanced Control Lab II	2
ECM	261	Adv. Programmable Logic Controls	3.5
EC	138	CCNA I: Intro to Networking	3
CPR	100	First Aid, CPR & AED	0.5
			21

Fifth Semester (Fall)			Semester Credits
EC	210	Intro to VoIP	3
SD	225	Intro to SCADA Software	4
SD	229	Networking Concepts	3
SD	230	Intro to Visual Basic	3
SD	259	Advanced Programmable Logic Controllers ..	3
			16

Sixth Semester (Spring)			Semester Credits
SD	205	Process Controls	3
SD	239	Advanced Industrial Networking	3
SD	270	SCADA Testing & Control Lab	7
			13

Total Credits Required to Graduate with Both Degrees: 110

Electrical Utilities & Substation Technology

The goal of the Electrical Utilities & Substation Technology program is to provide students with an extensive hands-on experience that integrates the knowledge, skills and competencies that the electrical power utility industry needs to ensure that customers have access to power. Graduates will learn to install, inspect, test, repair and maintain electrical equipment in substations and other smart grid equipment on the power grid.

Substation technicians are individuals who work with electrical engineers to design, construct and maintain a substation, the facility which collects power at the generation site, connects to a transmission grid and downloads energy to a distribution network where the power is delivered to the consumer. Graduates will find employment working outdoors at a substation or performing maintenance on the grid system housed inside a utilities service facility.

Students are expected to conform to *Rules for Programs with Required Drug and Alcohol Testing* while enrolled in this program. See the Student Handbook for details.

Admissions Requirements: Applicants to the program must be a graduate of Electrical Construction & Maintenance, Wind Turbine Technology or Power Line Construction & Maintenance

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Award: AAS Degree

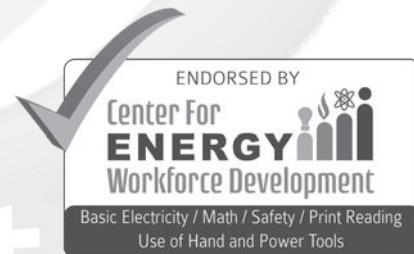
First Semester	Semester Credits
EUST 110 Intro to Basic Motor Controls	2
EUST 114 Substation Operations Lab I	4
EUST 120 Substation Operations I	3
EUST 132 Schematic Reading	2
EUST 145 Alternating Current Circuits	2
EUST 150 Substation Safety I	1

Second Semester	Semester Credits
EUST 115 Substation Operations Lab II	4
EUST 121 Substation Operations II	3
EUST 130 Intro to Smart Grid & Metering	2
EUST 131 Fiber Optics for Substations	2
EUST 142 Substation Communications Technology	2
EUST 151 Substation Safety II	1

In addition to the technical courses required in the program, the student seeking an AAS degree must also complete:

CIS 105 Complete Computer Concepts	3
Math Elective	3
Communications Elective	3
Behavioral Science Elective	3
Social Science Elective	3

Total Credits Required to Graduate: 43 (AAS)



The best jobs start here!

GPS/GIS Mapping Technology

The demand for new employees in GPS, GIS, geospatial mapping and data management is expanding in many industries. A skilled workforce to support the growing industry of mapping technology is needed. This one-year program includes courses in computers, GPS (Global Positioning Systems), data collection, CAD and GIS applications and analysis. Combining aspects of engineering, business, agriculture, energy, and technology, this program will meet current and future industry needs.

Career opportunities will include positions like GPS technician, survey technician, field technician, mapping technician, GIS specialist and more. Knowledge of this equipment and data is vital to people in mining; oil and gas extraction; utilities and

communication; construction; manufacturing; transportation; land, water and wildlife management; and personnel who work with data transfer and map production.

Students in this program may combine one year of GPS/GIS Mapping Technology with one year of Heating and Cooling Technology; Natural Gas Technology; or Power Line Construction and Maintenance, and with additional general education courses, will earn an AAS degree.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: Diploma or AAS

First Semester		Semester Credits
MAP	101	Introduction to GIS 4
MAP	105	GPS Data Collection & Management 4
MAP	110	CAD I 2
SSS	100	Student Success 1
CIS	105	Complete Computer Concepts 3
		Communications Elective 3
		17

Second Semester		Semester Credits
MAP	120	CAD II 2
MAP	121	Cloud Based GPS/GIS Apps 4
MAP	125	GIS Problems & Analysis 4
MAP	128	Remote Sensing 3
BUS	216	Spreadsheet Concepts & Applications 3
		Math Elective 3
		19

In addition to the technical courses required in the program, the student seeking an AAS degree must also complete:

Social Science Elective	3
Behavioral Science Elective.....	3

Total Credits Required for the Diploma: 36

The best jobs
start here!

Heating and Cooling Technology

The Heating and Cooling Technology program provides students with skills and knowledge in mechanics, electricity and sheet metal. Students also receive extensive training in energy management and environmental controls technology to include renewable energy resources such as geothermal and solar technology. Laboratory time is spent installing and servicing heating and cooling systems, as well as designing and forming sheet metal patterns for ductwork.

Graduates are prepared for an expanding field that includes jobs in sales, service, installation and industrial maintenance for a company or as a self-employed contractor. Some typical jobs include service or installation technician, sales, service trainer, industrial maintenance, supervisor, manufacturer's representative or business owner.

Students may complete the first year of the curriculum and earn a one-year diploma.

Students in this program may also combine one year of Heating and Cooling Technology with one year of GPS/GIS Mapping Technology; Natural Gas Technology; or Power Line Construction and Maintenance, and with additional general education courses, will earn an AAS degree.

Note: A combination degree requiring completion of selected courses is available. Check with the Admissions Office for details.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: One-Year Diploma or AAS Degree

First Semester		Semester Credits
HV	101	Electrical Fundamentals..... 3
HV	111	Heating Fundamentals..... 3
HV	121	AC and Refrigeration Fundamentals 2
HV	151	AC/Heating/Refrigeration Lab I..... 4
CIS	105	Complete Computer Concepts 3
SSS	100	Student Success 1
		Communications Elective 3
		19

Second Semester		Semester Credits
HV	122	Sheet Metal Technology and Lab 3
HV	132	Heating & Refrigeration Theory..... 4
HV	142	HV Controls & Heat Pumps 3
HV	152	AC/Heating/Refrigeration Lab II 4
		Math Elective 3
		17

AAS Degree ONLY

Third Semester (Summer)		Semester Credits
HV	290	Internship 6

Fourth Semester (Fall)		Semester Credits
HV	160	Planning & Estimating 3
HV	231	Heat Pumps/Solar Heating Theory..... 3
HV	244	Wiring Schematics 2
HV	251	AC/Heating/Refrigeration Lab III..... 4
		Social Science Elective 3
		15

Fifth Semester (Spring)		Semester Credits
HV	202	Commercial Refrigeration 4
HV	232	Commercial Air Conditioning..... 3
HV	252	AC/Heating/Refrigeration Lab IV 4
HV	259	DDC Temperature Control..... 3
OSHA	101	OSHA 10 Training - Construction 1
		Behavioral Science Elective 3
		18

Total Credits Required to Graduate: 36 (Diploma)

Total Credits Required to Graduate: 75 (AAS)

The Heating and Cooling Technology program is accredited by:

HVAC Excellence
PO Box 491
Mt. Prospect, IL 60056
800.394.5268
www.hvacexcellence.org



Human Services Technician

The Human Services Technician program is designed to prepare students for positions in a variety of agencies and organizations that provide human and social services to all ages, from children to seniors. Students will learn to adapt to many different types of situations through classroom activities and fieldwork experiences under the supervision of experienced instructors and working professionals.

When you enroll in the HST program at MTI, you will spend two years (four semesters) preparing to work in a fast-growing occupation, well versed in the skills needed to provide vital information, advocacy, care and support to people of diverse cultural, racial and ethnic backgrounds. The Associate degree will prepare students for work in residential facilities for youth or adults, case management, retirement communities, substance abuse facilities, nursing homes, assisted living and agencies that deal with juvenile and criminal justice.

Admission Requirement: All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions office.

Program immunization requirements have to be met before entrance to fieldwork sites. See instructor for details.

Program Graduation Requirement: Students must earn a grade of C (2.0) or higher in all technical courses as a prerequisite to HST 290. Students must earn a grade of C (2.0) or higher in their fieldwork in order to graduate.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Award: AAS Degree

First Semester		Semester Credits
HST	101	Intro to Human Services..... 3
HST	104	Community Resources 3
HST	106	Human Services Populations 3
HST	112	Disabilities..... 2
HST	130	Behavioral Theory & Principles 2
CIS	105	Complete Computer Concepts 3
SSS	100	Student Success 1
		17

Second Semester		Semester Credits
HST	120	Chemical & Substance Abuse..... 3
HST	122	Abuse and Neglect 3
HST	124	Assessment & Documentation 3
HST	128	Self Care..... 2
CHRD	130	Human Development..... 3
		Math Elective 3
		17

Third Semester		Semester Credits
HST	210	Family Dynamics..... 3
HST	222	Mental Health & Wellness 3
HST	226	Group Practice..... 3
HST	230	Career & Internship Prep 2
HST	246	Intro to Youth Services 2
		Communications Elective 3
		Social Science Elective 3
		19

Fourth Semester		Semester Credits
HST	220	Workplace Ethics 2
HST	240	Crisis Intervention 2
HST	242	Intro to Gerontology 2
HST	244	Intro to Corrections 2
HST	250	Social Welfare..... 2
HST	290	Internship 6
MA	100	Basic Life Support for Healthcare0.5
		16.5

Total Credits Required to Graduate: 69.5

The best jobs
start here!

Information Systems Technology

IT specialists are needed in every kind of business, no matter the size, to install, troubleshoot and support computer network systems. The Information Systems Technology program at Mitchell Technical Institute offers a comprehensive program to train entry level network or system administrators. Network Administrators are responsible for the computer network infrastructure. They maintain connectivity and security of the routers, switches and wireless equipment that modern networks depend on. System Administrators are skilled information technology professionals who are responsible for installing, supporting and maintaining servers and utilizing networking applications.

MTI's sophisticated labs and virtual modules enable students to learn the most current installation, troubleshooting and repair skills available. Network security is infused into every aspect of the curriculum, ensuring that graduates are well prepared to work in many employment sectors where data security is needed.

According to the Bureau of Labor Statistics, "The growing use of sophisticated computer networks and Internet and

intranet sites and the need for faster, more efficient networking products will result in a higher than average job growth in this area."

Students who complete a one-year diploma may also complete the online Office Technology Specialist program and receive an AAS degree as a Computer Support Specialist. Computer Support Specialists install, modify and make minor repairs to microcomputer hardware and software systems, as well as provide technical assistance and training to system users.

Please Note: Students in this program may be required to lift 50 lbs. and to demonstrate visual color discrimination.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Entrance Requirement: All IST applicants must complete the ACT or ACCUPLACER exam. Students not meeting the minimum math entrance score will be advised to meet with an IST faculty member to develop an academic plan of study that will ensure successful completion of the program.

Award: One-Year Diploma or AAS Degree

First Year/One-Year Diploma

First Semester		Semester Credits
IST 105	SQL Database Management.....	2
IST 120	A+ Hardware/Operating Systems.....	5
IST 140	Cisco CCNA I.....	5
EC 181	VoIP/Cabling.....	3
CIS 105	Complete Computer Concepts.....	3
SSS 100	Student Success.....	1
		19

Second Semester		Semester Credits
IST 112	MS Server Administration.....	5
IST 125	A+ Certification Prep.....	1
IST 141	Cisco CCNA II.....	5
IST 156	Information Security I.....	2
IST 159	LINUX Systems.....	2
	Math Elective.....	3
	Communications Elective.....	3
		21

Total Credits Required to Graduate: 40 (Diploma)

Second Year

Third Semester (Summer)		Semester Credits
IST 286	Internship.....	6

Fourth Semester		Semester Credits
IST 243	Cisco CCNA III.....	2
IST 244	Cisco CCNA IV.....	2
IST 256	Information Security II.....	3
IST 259	LINUX Server.....	2
IST 264	MS Active Directory.....	4
IST 265	Network Monitoring & Management.....	2
	Behavioral Science Elective.....	3
		18

Fifth Semester		Semester Credits
IST 207	DataCenter Logistics.....	2
IST 208	Computer Forensics.....	3
IST 266	Information Security III.....	3
IST 268	MS Exchange Server.....	3
IST 270	Technical Lab.....	2
	Social Science Elective.....	3
		16

Total Credits Required to Graduate: 80 (AAS)

Licensed Practical Nursing (LPN)

The LPN (Licensed Practical Nursing) program prepares graduates for entry into the nursing profession as a practical nurse. The program includes nursing and general education courses and can be completed in one calendar year.

This program focuses on the art and science of nursing, and is taught in classrooms, MTI's state-of-the-art high-fidelity medical simulation laboratory, and in clinical practice settings. Students attend class, skills labs and clinical simulation experiences on campus. Additionally, students participate in clinical learning experiences in various healthcare settings in surrounding communities and simulated clinical experiences under the guidance of nursing faculty. Clinical experiences provide students with the opportunity to apply nursing theory and critical thinking skills to patient care situations to help develop sound clinical judgment.

General Education courses in the nursing curriculum are offered in traditional and online format. Students may elect to complete general education courses prior to entering the program.

Graduates of the program find jobs in a variety of health care settings including long-term care facilities, home health care agencies, state and federal health-related facilities, private duty nursing, clinics, and office settings.

Award: One-Year Diploma

First Semester (Fall)		Semester Credits
LPN	100	Test Taking Strategies0.5
LPN	101	Fundamentals of Nursing 4
LPN	102	Fundamental of Nursing Clinical..... 2
LPN	103	Pharmacology 3
MA	100	Basic Life Support for Health Care0.5
MA	103	Anatomy/Physiology..... 4
MATH	101	Intermediate Algebra 3
SSS	100	Student Success 1
		18

Second Semester (Spring)		Semester Credits
LPN	105	Adult Health Nursing I 4
LPN	106	Adult Health Nursing I Clinical..... 3
LPN	107	Maternal & Child Nursing..... 3
LPN	108	Maternal & Child Nursing Clinical..... 2
CIS	105	Complete Computer Concepts 3
ENGL	101	English Composition..... 3
		18

Third Semester (Summer)		Semester Credits
LPN	110	Adult Health Nursing II..... 5
LPN	111	Geriatric Nursing..... 3
LPN	112	Adult Health & Geriatric Nursing Clinical..... 3
LPN	150	LPN Capstone Practicum 3
MA	162	Medical Law & Ethics..... 2
		Behavioral Science Elective..... 3
		19

Total Credits Required to Graduate: 55 (Diploma)

Admissions Requirements: All LPN applicants must have an ACT score of 18 or above in all sections, or the AccuPlacer equivalent; must have a high school or college cumulative GPA of 2.5 or higher; and must complete the TEAS Exam with a composite score of 58.6% or higher.

All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions office.

Other requirements include immunizations; a physical exam; health insurance carried by the student; CNA certification or 100 hours of documented direct patient care; and more. See the Director of Nursing for details.

Progression in the nursing program is dependent upon satisfactory completion of the prescribed sequence of courses. Students must successfully complete all required nursing and general education courses, with a grade of "C" or higher before progression to the next semester is allowed and to qualify for graduation. Students must adhere to the standards of student conduct contained in the Practical Nursing Program Student Guide and the MTI Student Handbook to progress in the program.

The MTI Licensed Practical Nursing program has been granted Interim Status by the South Dakota Board of Nursing.
<https://doh.sd.gov/boards/nursing/education.aspx>

For further information regarding the program's status with SDBON, please contact:

Dr. Carena Jardine, DNP, RN, LPN
Nursing Program Director
Mitchell Technical Institute
1800 E. Spruce St.
Mitchell, SD 57301
(605) 995-7148

Medical Assistant

The Medical Assistant is a professional, multi-skilled person who assists in all aspects of medical practice. Medical Assistants help physicians examine and treat patients and perform routine tasks to keep offices running smoothly.

Medical assistants perform clerical duties such as answering telephones, greeting patients, updating and filing patient medical records, completion of insurance forms, handling correspondence and arranging for hospital admission and laboratory services. Clinical duties include taking and recording vital signs, explaining treatment procedures, preparing patients for examination, collecting laboratory specimens, administering medication (excluding intravenous), authorizing prescription telephone orders and preparing patients for X-rays. Opportunities exist in clinics, hospitals, nursing homes and insurance companies.

Admission Requirement: All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions Office.

Some immunization requirements may have to be met before entrance to certain clinical sites. See the Instructor for details.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Program Graduation Requirements: It is the goal of this program to prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains. To achieve that goal, students must earn a grade of C (2.0) or higher in all technical courses as a prerequisite to MA 250 Clinical Externship. Students must earn a grade of C (2.0) or higher in their clinical externship in order to graduate.

Award: AAS Degree

First Semester		Semester Credits
MA	101	Medical Terminology..... 3
MA	103	Anatomy/Physiology..... 4
MA	106	Medical Laboratory Fundamentals 4
MA	162	Medical Law & Ethics..... 2
MATH	101	Intermediate Algebra 3
SSS	100	Student Success 1
		17

Second Semester		Semester Credits
MA	111	Medical Office Procedures..... 3
MA	112	Laboratory Procedures I..... 4
MA	123	Pathophysiology..... 3
MOP	160	CPT/ICD-10/CM Coding 3
CIS	105	Complete Computer Concepts 3
		Behavioral Science Elective..... 3
		19

Third Semester		Semester Credits
MA	113	Laboratory Procedures II 4
MA	210	Pharmacology & Admin. of Medicines 3
MA	220	Examination Room Techniques I..... 4
MOP	210	Medical Insurance & Billing..... 3
		Communications Elective 3
		Social Science Elective 3
		20

Fourth Semester		Semester Credits
MA	100	Basic Life Support for Health Care 0.5
MA	211	Advanced Medical Office Procedures 3
MA	221	Examination Room Techniques II 3
MA	240	Cardiac Monitoring and Dx Procedures 2
MA	250	Clinical Externship 6
		14.5

Total Credits Required to Graduate: 70.5

The MTI Medical Assistant program, offered for the AAS degree, is accredited by The Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs

25400 US Highway 19 North, Suite 158
Clearwater, FL 33763
(727) 210-2350
www.caahep.org

Medical Laboratory Technology

This program will prepare students for employment as medical laboratory technicians responsible for performing laboratory analysis. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). A student spends the first three semesters of the program in the classroom and lab at MTI. The remainder of the program assigns students to an affiliated hospital/clinic lab for a clinical practicum externship. During this time the student will work under the supervision of the lab personnel performing tests and other lab work as well as completing class assignments.

Graduates may test to become certified as Medical Laboratory Technicians by the Board of Certification.

Note: It is required that applicants to the program have successfully completed high school Algebra I and II, chemistry and biology with a C (2.0) or better to demonstrate proficiency in math and science. In addition, an applicant must have a cumulative high school GPA of 2.5 or higher.

Some special requirements may have to be met before entrance to the program or to certain clinical sites. See the Program Director or the MLT Student Handbook for details.

Admission Requirement: All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions office.

Some immunization requirements may have to be met before entrance to certain clinical sites. See the Instructor for details.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Program Graduation Requirement: Students must earn a grade of C (2.0) or higher in all technical courses and MA 101 and MA 103 including the clinical practicum in order to graduate.

Award: AAS Degree

First Semester		Semester Credits
ML	104	Medical Laboratory Fundamentals 3
ML	105	Instrumentation 2
MA	101	Medical Terminology 3
MA	103	Anatomy/Physiology 4
CIS	105	Complete Computer Concepts 3
MATH	101	Intermediate Algebra 3
SSS	100	Student Success 1
		19

Second Semester		Semester Credits
ML	111	Hemostasis 2
ML	112	Hematology 6
ML	121	Urinalysis/Body Fluids 3
ML	144	Intro to Laboratory Chemistry 3
ML	171	Immunology/Serology 3
ENGL	101	English Composition 3
		20

Third Semester		Semester Credits
ML	230	Clinical Chemistry 4
ML	240	Microbiology 6
ML	272	Immunohematology/Blood Banking 3
MA	100	Basic Life Support for Health Care 0.5
		Behavioral Science Elective 3
		Social Science Elective 3
		19.5

Fourth Semester		Semester Credits
Clinical Practicum		
ML	214	Practical Clinical Hematology* 4
ML	224	Practical Clinical Urinalysis/Body Fluids* 3
ML	244	Practical Clinical Microbiology/Serology* 5
ML	274	Practical Clinical Immunohematology* 4
		16

Fifth Semester		Semester Credits
Clinical Practicum		
ML	234	Practical Clinical Chemistry/Immunoassay* . . 6

*Prerequisite: Students must have earned a grade of C or better in all previous technical courses before enrolling in clinical courses.

Total Credits Required to Graduate: 80.5

The MTI Medical Laboratory Technology program, offered for the AAS degree, is accredited by:

The National Accrediting Agency for Clinical Laboratory Sciences

5600 N. River Rd. Suite 720
Rosemont, IL 60018-5119
(773) 714-8880
www.naacls.org

Medical Office Professional

A skilled Medical Office Professional is an invaluable asset to any medical office, working effectively with medical professionals and patients while performing assorted office duties. With the number of healthcare procedures escalating every year as the population ages, there's a high demand for skilled specialists in patient information technology and medical billing and reimbursement. Medical Office Professionals (MOP) are the experts on patient data that doctors, nurses and other providers rely on to perform their jobs.

Medical records and health information technicians can expect to be in high demand in the health sector during the next 20 to 30 years. In fact, the Bureau of Labor Statistics projects health information technology will be one of the 20 fastest growing occupations in the U.S.

Career opportunities in these areas include Medical Receptionist, Medical Records Clerk, Medical Information

Management Clerk, Health Information Management, Medical Claims Clerk, Medical Claims Processor, Medical Claims Analyst or more.

Admission Requirement: All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions Office.

Program Graduation Requirement: Students must earn a grade of C (2.0) or higher in all technical courses as a prerequisite to MOP 290. Students must earn a grade of C (2.0) or higher in their clinical internship in order to graduate.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: AAS Degree

First Semester		Semester Credits
BUS 110	Accounting for Business I	4
MA 101	Medical Terminology.....	3
MA 103	Anatomy/Physiology.....	4
CIS 105	Complete Computer Concepts	3
SSS 100	Student Success	1
	Communications Elective	3
		18

Second Semester		Semester Credits
MOP 130	Computers in the Medical Office	3
MOP 160	CPT/ICD-10/CM Coding	3
BUS 111	Accounting for Business II.....	4
MA 210	Pharmacology & Admin of Medicines.....	3
	Math Elective	3
	Social Science Elective	3
		19

Third Semester		Semester Credits
MOP 206	Transcription I	4
MOP 210	Medical Insurance & Billing.....	3
MOP 230	Medical Office Administration.....	3
MOP 260	Advanced Coding I.....	4
MA 123	Pathophysiology.....	3
	Behavioral Science Elective.....	3
		20

Fourth Semester		Semester Credits
MOP 212	Electronic Medical Records.....	3
MOP 262	Case Study Coding.....	3
MOP 290	Clinical Internship	8
MA 100	Basic Life Support for Health Care	0.5
MA 162	Medical Law & Ethics.....	2
		16.5

Total Credits Required to Graduate: 73.5

The best jobs
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Natural Gas Technology

The Natural Gas Technology program will teach you the skills needed to install, maintain, operate and repair gas distribution systems and equipment for residential, commercial and industrial customers.

As infrastructure ages and the need for gas services increases, companies are looking to hire now. After just one year, you will find a wide range of job options with starting annual salaries as high as \$55,000.

Graduates may find employment with public utilities or municipalities to install and maintain gas service, or in the construction industry which contracts with utilities for installation and maintenance.

Students in this program may combine one year of Natural Gas Technology with one year of GPS/GIS Mapping Technology; Heating and Cooling Technology; or Power Line Construction and Maintenance, and with additional general education courses, will earn an AAS degree.

Students are expected to conform to *Rules for Programs with Required Drug and Alcohol Testing* while enrolled in this program. See the Student Handbook for details. Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program. See the Course Description for TRAN 100 for a full explanation.

Award: Diploma

First Semester		Semester Credits
NGT	100	Safety for the Natural Gas Technician 1
NGT	101	Electrical Fundamentals..... 3
NGT	104	Foundations of Natural Gas Technology 2
NGT	102	Gas Operations & Maintenance..... 3
NGT	105	Gas Installation Lab 3
CIS	105	Complete Computer Concepts 3
CPR	100	First Aid & CPR.....0.5
OSHA	101	Construction OSHA 10 1
SSS	100	Student Success 1
		17.5

Second Semester		Semester Credits
NGT	108	Customer Service 2
NGT	110	Trenching & Excavation Practices 2
NGT	112	Gas Measurements & Controls..... 3
NGT	115	Gas Mapping & Operations..... 3
PTS	101	Intro to GPS Technologies 2
TRAN	100	Industrial Transportation/CDL 1
MATH	104	Technical Math 3
ENGL	110	Workplace Communications 3
		19

Total Credits Required to Graduate: 36.5

Power Line Construction & Maintenance

Mitchell Technical Institute offers the only Power Line program in South Dakota. Employment opportunities are available with rural electric cooperatives, municipal and private utility companies, the Bureau of Reclamation, private contractors and many others. Course material and lab are based around the application and theory of distribution and transmission of electrical power. Fieldwork includes operating a digger derrick truck, setting poles, climbing poles, installing anchors and stringing conductors. Outside lab also involves installation of transformers, metering for overhead and underground distribution systems.

Physical fitness is an important part of the job of an electrical line worker. A careful, detail-oriented personality is also a good quality to possess since individuals will be working with high voltage, often in dangerous situations and bad weather conditions; safety is a major element of line worker training. Line work is extremely challenging as the type of projects, conditions and work locations change frequently. Lineworkers perform tasks in an outdoor environment subjected to various weather conditions such as extreme heat or in freezing temperatures in the rain, sleet, wind and snow. The work is done in both overhead and underground lines with the overhead work typically done at heights more than 25 feet above the ground. Lineworkers are often on call at any hour to restore power.

Students in this program may combine one year of Power Line Construction and Maintenance with one year of GPS/GIS Mapping Technology; Heating and Cooling Technology; or Natural Gas Technology, and with additional general education courses, will earn an AAS degree.

Award: One-Year Diploma

First Semester		Semester Credits	
PL	111	Fundamentals of DC/AC.....	3
PL	141	Power Grid Design.....	2
PL	150	Field Training I.....	4
PL	151	Construction of Underground Lines.....	4
PL	171	Utility Safety I.....	1
PAT	100	Intro to GPS Technologies.....	1
CPR	100	First Aid, CPR & AED.....	0.5
OSHA	101	OSHA 10 Training-Construction.....	1
SSS	100	Student Success.....	1
CIS	105	Complete Computer Concepts.....	3
			20.5

Students are expected to conform to *Rules for Programs with Required Drug and Alcohol Testing* while enrolled in this program. See the Student Handbook for details. Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program. See the Course Description for TRAN 100 for a full explanation.

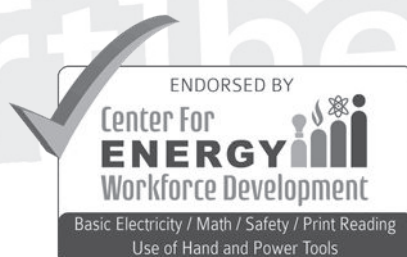
Please Note: Students planning to obtain an AAS degree in Utilities Technology MUST complete the CDL requirement during their first year of enrollment.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Note: MTI recommends that applicants in the Power Line Construction & Maintenance program obtain a physical examination for their safety and protection. Applicants to this program need to be able to perform physical activities that require considerable use of arms and legs and moving the whole body, such as climbing, lifting, balancing, walking, stooping and handling of heavy materials.

Second Semester		Semester Credits	
PL	120	Transformer Connections.....	3
PL	143	Power Grid Design II.....	2
PL	154	Maintenance of Underground Lines.....	4
PL	156	Field Training II.....	4
PL	172	Utility Safety II.....	1
TRAN	100	Industrial Transportation/CDL.....	1
		Communications Elective.....	3
		Math Elective.....	3
			21

Total Credits Required to Graduate: 41.5



Power Sports Technology

Technicians in the fast-growing occupation of outdoor power sports are in demand all across the country. The last two decades have seen an increase in the number of recreational vehicles in households and businesses: motorcycles, scooters, snowmobiles, ATVs, four-wheelers and more.

Students will get experience learning service and repair of these high-powered machines in MTI's state-of-the-art laboratories.

An optional second year is offered. Students who complete the second year will earn an AAS degree and will receive enhanced training in areas like marine engines, jet skis and other personal watercraft, metal fabrication, paint and detailing, supervision

and management and more. With two years of training, students will have even more opportunities in this exciting field.

Many dealerships in the region will offer supervised job shadowing and internship experiences. Employment opportunities can be found in many areas including dealership sales and service, cycle builders and manufacturers, ag maintenance shops and various other locations.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Award: One-Year Diploma or AAS Degree

First Semester		Semester Credits
OPRV	105	Service Center Fundamentals 2
OPRV	120	Basic Engine Theory & Operation 2
OPRV	121	Basic Engine Lab 2
OPRV	130	Electrical/Electronic Systems 2
OPRV	140	Multi-Cylinder 2 & 4 Cycle Engines 2
OPRV	141	Multi-Cylinder Engine Lab 2
SSS	100	Student Success 1
		Math Elective 3
		16

Second Semester		Semester Credits
OPRV	124	ATV & Snowmobile Systems 2
OPRV	125	ATV & Snowmobile Lab 3
OPRV	137	Marine Maintenance 2
OPRV	142	Adv. Multi-Cylinder 2 & 4 Cycle Engines 2
OPRV	143	Adv. Multi-Cylinder Engine Lab 4
OPRV	150	Handheld Power Equipment Lab 3
CIS	105	Complete Computer Concepts 3
		19

Third Semester (Summer)		Semester Credits
OPRV	185	Internship 6

Total Credits Required to Graduate: 41 (Diploma)

Fourth Semester (Fall)		Semester Credits
OPRV	205	Motorcycle Collision Repair 3
OPRV	235	Intro to Fuel Injection & Electronic Systems .. 3
OPRV	260	Marine Technology 2
OPRV	261	Marine Technology Lab 3
AGT	213	Welding & Fabrication 2
		Behavioral Science Elective 3
		16

Fifth Semester (Spring)		Semester Credits
OPRV	209	Adv. Paint & Custom Finishes 3
OPRV	236	Adv. Fuel Injection & Electronic Systems 3
OPRV	240	Motorcycle Systems Lab 2
OPRV	262	Adv. Marine Technology & Diagnostics 2
OPRV	263	Adv. Marine Technology & Diagnostics Lab .. 3
		Communications Elective 3
		Social Science Elective 3
		19

Total Credits Required to Graduate: 76 (AAS)

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Precision Ag Technology

The demand for new employees in geospatial data processing and equipment installation is expanding agriculture.

A skilled workforce to support the growing industry of precision ag technology is needed. This two-year program includes courses in computers, GPS (Global Positioning Systems), data collection, agronomy and ag economics. A strong background in math and science is recommended for this program. Combining aspects of engineering, business, agriculture, energy and technology, this program will meet current and future industry needs.

MTI's sophisticated labs will give students hands-on experience with cutting-edge technology including tractors, planters, harvesters, and a commercially rated drone.

Career opportunities include positions like GPS technician, custom applicator, precision technician and more. Knowledge of this equipment and data is vital to people in equipment sales and service, dealerships, applicators, crop consultants and agronomists.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: AAS Degree

First Semester		Semester Credits
PAT	102	Principles of GPS/GIS..... 2
PAT	107	Basic Hydraulics 2
PAT	121	Precision Ag Electronics..... 4
PAT	130	Technology & Installation Lab I 4
PAT	151	Precision Ag Electronics Lab..... 3
BUS	216	Spreadsheet Concepts & Applications 3
SSS	100	Student Success 1
		19

Second Semester		Semester Credits
PAT	111	Wireless Communications..... 2
PAT	140	Guidance Systems & Remote Sensing..... 3
PAT	142	Data Collection 3
PAT	190	Internship 6
AGT	158	Small Engines..... 3
OSHA	100	OSHA 10 Training-General..... 1
		18

Third Semester (Fall)		Semester Credits
PAT	210	GIS Applications 4
AGT	120	Soil Science I..... 3
AGT	212	Ag Chem Equipment..... 3
AGT	261	Ag Sales & Service 3
		Math Elective 3
		Social Science Elective 3
		19

Fourth Semester (Spring)		Semester Credits
PAT	203	Intro to Variable Rate Systems 3
PAT	230	Technology & Installation Lab II 4
AGT	110	Crop Science I 3
AGT	218	Principles of Ag Management 3
CPR	100	First Aid, CPR & AED.....0.5
		Behavioral Science Elective..... 3
		Communications Elective 3
		19.5

Total Credits Required to Graduate: 75.5

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Radiation Therapy

The Radiation Therapy program utilizes didactic, laboratory and clinical education to prepare students to work as Radiation Therapists in cancer treatment centers and hospitals. Radiation Therapists work under the direction of a radiation oncologist to treat patients with malignant diseases using ionizing radiation. Radiation therapists practice appropriate patient care, apply problem-solving and critical thinking skills, administer treatment protocols and maintain patient records. The program uses a combination of technical and general education courses to emphasize decision-making and critical thinking skills based upon a solid clinical foundation. Students will spend two semesters in a radiation therapy facility completing their clinical experience. This requires students to relocate at their own expense to the community where the assigned facility is located.

The program consists of three consecutive semesters. Students are also required to meet MTI's general education requirements and other prerequisite courses such as physiology, anatomy, physics and college algebra.

In addition to the prerequisite courses, *the only students accepted into the program are ARRT registered or registry-eligible radiographers*. MTI's registrar works with the admissions counselor and the program director to evaluate transcripts to assure that enrolling students meet the prerequisite requirements.

Award: AAS Degree

First Semester (Fall)		Semester Credits
RTH	200	Introduction to Radiation Therapy..... 2
RTH	201	Nursing & Patient Care Issues..... 2
RTH	202	Radiation Therapy Physics I..... 3
RTH	203	Radiation Therapy Physics II..... 3
RTH	205	Clinical Radiation Oncology..... 4
RTH	206	Simulation & Medical Imaging..... 3
MA	100	Basic Life Support for Health Care.....0.5
		17.5

Second Semester (Spring)		Semester Credits
RTH	207	Radiation Biology..... 1
RTH	209	Radiation Therapy Topics..... 2
RTH	210	Clinical Practicum I..... 10
RTH	212	Registry Review I..... 1
		14

Third Semester (Summer)		Semester Credits
RTH	211	Modern Radiation Therapy Research..... 3
RTH	213	Clinical Practicum II..... 8
RTH	214	Registry Review II..... 1
AMI	110	Cross-Sectional Anatomy..... 3
		15

Total Credits Required to Graduate: 61.5

Deadline for application: Contact the Admissions Office for information about the annual application deadline.

Admissions Requirements: All students accepted to the program must submit to a criminal background check and drug screen at the student's expense. Details are available from the Admissions Office.

Academic Standards: Students must complete all technical courses with a minimum grade of C (2.0) in order to graduate. Students who do not achieve a C (2.0) grade will be prevented from enrolling in the subsequent semester due to prerequisite requirements.

Some additional requirements (including, but not limited to, drug screening and immunizations) may have to be met before entrance to certain clinical sites. Students must meet all of MTI's general education requirements in order to receive an AAS degree. See the Program Director or Registrar for a transcript evaluation.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

In addition to the technical courses required in the program, the student seeking an AAS degree must also complete:

		Communications Elective..... 3
		Behavioral Science Elective..... 3
		Social Science Elective..... 3
CIS	105	Complete Computer Concepts..... 3
		College Algebra..... 3

The MTI Radiation Therapy program, offered for the AAS degree, is accredited by:

The Joint Review Committee on Education in Radiologic Technology

20 North Wacker Drive, Suite 2850
Chicago, IL 60606-3182
(312) 704-5300; Fax: (312) 704-5304
mail@jrcert.org
www.jrcert.org

Radiologic Technology

This program creates a unique clinical and didactic challenge to students, including a combination of classroom study and clinical rotation for practical application. The classroom portion teaches the student the fundamental principles of x-ray production, whereas the clinical portion allows students practical experience in real life situations. Graduates of the program will pursue employment opportunities in radiology or diagnostic imaging departments.

Admission Requirement:

- **Contact the MTI Admissions office for an application packet. Application requirements include visitation of a radiology department; submission of a written essay describing and analyzing the visit; and resume and references. Deadline for application: January 15.**

- **All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions Office.**

Academic Standards: Students must complete all technical courses and MA 101 and MA 103 with a minimum grade of C (2.0) in order to graduate. Students who do not achieve a C (2.0) grade will be prevented from enrolling in the subsequent semester due to prerequisite requirements.

Program immunization requirements have to be met before entrance to clinical sites. See an instructor for details.

Note: Students are required to use a laptop or notebook computer for this program. Students must bring their own device, which must meet MTI specifications, or may purchase one from MTI.

Award: AAS Degree

First Semester (Fall)		Semester Credits
RAD	110	Introduction to Rad Tech and Ethics 2
RAD	140	Radiology Principles I 5
RAD	150	Radiographic Procedures I 6
MA	101	Medical Terminology..... 3
MA	103	Anatomy / Physiology..... 4
SSS	100	Student Success 1
		21

Second Semester (Spring)		Semester Credits
RAD	120	Intro to Clinical Radiology..... 2
RAD	142	Radiology Principles II..... 5
RAD	152	Radiographic Procedures II 6
RAD	160	Radiographic Pathology..... 3
RAD	170	Radiation Biology & Protection 3
MA	100	Basic Life Support for Healthcare0.5
		19.5

Third Semester (Summer)		Semester Credits
RAD	154	Radiographic Procedures III 2
RAD	211	Clinical Radiology I..... 8
RAD	212	Registry Review I..... 1
AMI	110	Cross-Sectional Anatomy..... 3
		General Education Elective* 3
		17

Fourth Semester (Fall)		Semester Credits
RAD	221	Clinical Radiology II 11
RAD	222	Registry Review II 1
MATH	101	Intermediate Algebra 3
		General Education Elective* 3
		18

Fifth Semester (Spring)		Semester Credits
RAD	231	Clinical Radiology III 11
RAD	232	Registry Review III 1
ENGL	101	English Composition I..... 3
		General Education Elective* 3
		18

Total Credits Required to Graduate: 93.5

The MTI Radiologic Technology program, offered for the AAS degree, is accredited by:

The Joint Review Committee on Education in Radiologic Technology

20 North Wacker Drive, Suite 2850
Chicago, IL 60606-3182
(312) 704-5300; Fax: (312) 704-5304
mail@jrcert.org
www.jrcert.org

*The student must select from Social Science, Behavioral Science and Complete Computer Concepts to fulfill the degree requirements.

Telecommunications

The art and science of getting information from Point A to Point B, regardless of whether the information is voice, video or data, is known as Telecommunications. This program is designed to prepare students for the communications industry by teaching installation, operation and maintenance of communication systems using a full range of communication transport systems.

The program provides a thorough examination of state-of-the-art telecommunications technology, as well as a solid foundation in math, electronics and general education. The successful student in this program will demonstrate a variety of skills and abilities including visual color discrimination; finger and manual dexterity; customer and personal service skills; ability to install, operate, repair and maintain electronic equipment; documentation and recording of information; and communication with supervisors, peers and subordinates.

Students apply their basic knowledge of electronics, science and math by performing tests and troubleshooting equipment, working in field service or maintaining sophisticated electronic

systems and residential connectivity and commercial telephone networking equipment. Graduates will find employment opportunities all over the world.

Preparing a workforce to compete in this global marketplace is the exciting challenge for the telecommunications industry. This program will give students the education and skills necessary to succeed in the high-tech world of telecom.

Note: Students are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Graduation Requirement: Students must complete their internship experience before earning their degree.

Award: AAS Degree

First Semester		Semester Credits
EC	112	Electronics Theory 3
EC	121	DC/AC Circuit 3
EC	151	Electronics Lab I 3
EC	162	Electronics Math/Digital 2
EC	167	IT Essentials 3
		Social Science Elective 3
SSS	100	Student Success 1
		18

Second Semester		Semester Credits
EC	100	Basic Telephony 3
EC	105	Transmission Media 3
EC	120	Television/Head-End Technology 2
EC	138	CCNA I: Intro to Networking 3
EC	157	Electronics Lab II 3
		Communications Elective 3
		17

Third Semester (Summer)		Semester Credits
EC	290	Internship 6

Fourth Semester		Semester Credits
EC	210	Introduction to VoIP 3
EC	211	Wireless Communications 3
EC	238	CCNA II: Routing & Switching Essentials 3
EC	249	Advanced OSP 3
EC	251	Telecom Lab III 4
		16

Fifth Semester		Semester Credits
EC	246	Central Office Transport 3
EC	257	Telecom Lab IV 5
PAT	102	Principles of GPS/GIS 2
		Behavioral Science Elective 3
		Math Elective 3
		16

Total Credits Required to Graduate: 73

Utilities Technology

The utilities industry is one of the most technologically intensive segments of today's economy. The utility worker who is well rounded with knowledge of different types of utilities will find success in many areas. MTI is addressing this industry need by combining the curricula of two existing programs to offer an AAS degree in Utilities Technology.

Students who complete a combination of any of these two programs, Power Line Construction and Maintenance; GPS/GIS Mapping Technology; Heating & Cooling Technology; or Natural Gas Technology, with the requisite general education classes, will be awarded an AAS degree. Graduates of this program will find many employment opportunities with utility providers.

Students are expected to conform to *Rules for Programs with Required Drug and Alcohol Testing* while enrolled in this program. See the Student Handbook for details. Any student who enrolls in Commercial Driver training must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program. See the Course Description for TRAN 100 for a full explanation.

Award: AAS Degree

PL Curriculum

First Semester		Semester Credits
PL 111	Fundamentals of DC/AC.....	3
PL 141	Power Grid Design	2
PL 150	Field Training I	4
PL 151	Construction of Underground Lines	4
PL 171	Utility Safety I.....	1
PAT 100	Intro to GPS Technologies.....	1

Second Semester		Semester Credits
PL 120	Transformer Connections	3
PL 143	Power Grid Design II	2
PL 154	Maintenance of Underground Lines	4
PL 156	Field Training II	4
PL 172	Utility Safety II	1

GPS/GIS Mapping Technology Curriculum

First Semester		Semester Credits
MAP 101	Introduction to GIS	4
MAP 105	GPS Data Collection & Management.....	4
MAP 110	CAD I.....	2

Second Semester		Semester Credits
MAP 120	CAD II	2
MAP 121	Cloud Based GPS/GIS Apps.....	4
MAP 125	GIS Problems & Analysis.....	4
MAP 128	Remote Sensing	3
BUS 216	Spreadsheet Concepts & Applications	2

Heating & Cooling Technology Curriculum

First Semester		Semester Credits
HV 101	Electrical Fundamentals.....	3
HV 111	Heating Fundamentals.....	3
HV 121	AC and Refrigeration Fundamentals	2
HV 151	AC/Heating/Refrigeration Lab I.....	4

Please Note: Students planning to obtain an AAS degree in Utilities Technology MUST complete the CDL requirement during their **first** year of enrollment.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Note: MTI recommends that applicants to this program obtain a physical examination for their safety and protection. Applicants to this program need to be able to perform physical activities that require considerable use of arms and legs and moving the whole body, such as climbing, lifting, balancing, walking, stooping and handling of heavy materials.

Second Semester		Semester Credits
HV 122	Sheet Metal Technology and Lab	3
HV 132	Heating & Refrigeration Theory.....	4
HV 142	HV Controls & Heat Pumps	3
HV 152	AC/Heating/Refrigeration Lab II	4

Natural Gas Technology Curriculum

First Semester		Semester Credits
NGT 100	Safety for the Natural Gas Technician	1
NGT 101	Electrical Fundamentals.....	3
NGT 104	Foundations of Natural Gas Technology	2
NGT 102	Gas Operations & Maintenance.....	3
NGT 105	Gas Installation Lab	3

Second Semester		Semester Credits
NGT 108	Customer Service	2
NGT 110	Trenching & Excavation Practices	2
NGT 112	Gas Measurements & Controls.....	3
NGT 115	Gas Mapping & Operations.....	3
PTS 101	Intro to GPS Technologies.....	2

In addition to the technical courses required in each program, the student seeking an AAS degree must also complete:

TRAN 100	Industrial Transportation/CDL	1
OSHA 101	OSHA 10 Training	1
CPR 100	First Aid, CPR & AED.....	0.5
SOC 110	Industrial Relations	3
CIS 105	Complete Computer Concepts	3
SSS 100	Student Success	1
	Communications Elective	3
	Math Elective	3
	Behavioral Science Elective.....	3

Welding & Manufacturing Technology

The Welding & Advanced Manufacturing Technology program is industry-driven to educate students who want to pursue a career in the manufacturing industry. The program provides the proper skills for graduates to excel in welding, machining and lean manufacturing techniques. Students may earn an AAS degree by completing one of the second-year paths, and may return for a third year to complete two AAS degrees.

Instruction is AWS code-based so that students may sit for welding certification testing, assuring future employer requirements.

Designed for student success, graduates will have many employment opportunities in the manufacturing sector.

Labs include up-to-date technology in areas like gas metal arc welding of steel and aluminum, gas tungsten arc welding of steel and aluminum, shielded metal arc welding, robotic welding, operation of machining stations, metal forming, laser cutting and plasma cutting.

The program provides a path to industry leadership. With the knowledge and abilities gained, graduates will be able to become certified and help fill the demand in today's highly technical manufacturing environment.

Note: Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.

Award: One-Year Diploma

First Semester (Fall)		Semester Credits
WLD 101	Welding Safety & Discontinuities	3
WMT 132	Metallurgy	3
WMT 149	Basic Welding Lab	2
WMT 150	Welding Lab I	4
OSHA 100	OSHA 10 Training	1
MATH 104	Technical Math	3
SSS 100	Student Success	1
		17

Second Semester (Spring)		Semester Credits
WMT 120	Symbols & Measuring	1
WMT 121	Blueprint Reading	1
WMT 142	Welding Economics	3
WMT 151	Welding Lab II	7
CIS 105	Complete Computer Concepts	3
	Communications Elective	3
		18

Total Credits Required to Graduate (One-Year Diploma): 35

Progressive Welding Technology AAS Degree ONLY

Third Semester (Summer)		Semester Credits
WMT 281	Internship	6
		6

Fourth Semester (Fall)		Semester Credits
WMT 201	Quality & Productivity Improvement	2
WMT 230	Welding Robotic Lab	3
WMT 242	Welding Code	3
WMT 262	Adv. Welding Processes	4
	Social Science Elective	3
		15

Fifth Semester (Spring)		Semester Credits
WMT 232	Weld Testing Methods (NDT/DT)	4
WMT 252	Mechanical Workmanship Lab	2
WMT 271	Adv. Robot Welding Qualification	2
WMT 272	Adv. Welding Qualification	2
CPR 100	First Aid, CPR & AED	0.5
	Behavioral Science Elective	3
		13.5

Total Credits Required to Graduate (AAS): 69.5

Manufacturing/Machining AAS Degree ONLY

Third Semester (Summer)		Semester Credits
WMT 281	Internship	6
		6

Fourth Semester (Fall)		Semester Credits
WMT 201	Quality & Productivity Improvement	2
WMT 230	Welding Robotic Lab	3
WMT 231	Manual Machining Lab	3
WMT 240	Manufacturing Programming	3
	Social Science Elective	3
		14

Fifth Semester (Spring)		Semester Credits
WMT 250	Laser Cutting Technology	3
WMT 251	CNC Machining Station Lab	3
WMT 260	Adv. Machining	4
CPR 100	First Aid, CPR & AED	0.5
	Behavioral Science Elective	3
		13.5

Total Credits Required to Graduate (AAS): 68.5

Wind Turbine Technology

The power of the wind to generate electricity for today's consumer is only as reliable as the technicians who install and service the giant turbines. Today, wind is one of the fastest growing energy technologies. Wind turbine technicians and windsmiths are needed around the world to support the demand for clean, efficient energy.

This two-year program will allow students to learn about the basics of turbines, mechanics, hydraulics, electronics and the computer networks that allow the system to communicate. Unique hands-on experience will be available to students as they climb MTI's wind turbine located at the Crow Lake Wind Farm near White Lake, SD. MTI is one of only five schools nationwide to have an operational 1.5 MW wind turbine.

The second year of the program will give graduates experience in PLCs, fiber optics, SCADA, advanced electronics and more.

A graduate of the program will find employment opportunities in turbine construction, maintenance and troubleshooting, power distribution, controls and other areas that move the power through the grid.

Students are expected to conform to *Rules for Programs with Required Drug and Alcohol Testing* while enrolled in this program. See the Student Handbook for details.

Program Requirement: *Students must complete all technical courses with a minimum grade of C. Students who do not achieve a C grade will be prevented from enrolling in the subsequent semester due to prerequisite requirements.*

Note: *Students in this program are required to purchase a laptop computer from MTI. The laptop will have the necessary software installed and will be serviced free of charge while the student is attending MTI.*

Award: AAS Degree

First Semester (Fall)		Semester Credits
WTT	100	Turbine Safety 1
WTT	101	Intro to Wind Technology 2
WTT	102	Basic Turbine Mechanics 4
WTT	104	Schematics 2
WTT	105	DC/AC Turbine Circuits 3
WTT	130	Field Training I 0.5
OSHA	101	OSHA 10 Training-Construction 1
CPR	100	First Aid, CPR & AED 0.5
SSS	100	Student Success 1
		Math Elective 3
		18

Second Semester (Spring)		Semester Credits
WTT	108	Hydraulics 2
WTT	112	Electronics I 4
WTT	120	Industrial Motor Controls 4
WTT	131	Field Training II 0.5
EC	130	Network Essentials 3
CIS	105	Complete Computer Concepts 3
		16.5

Third Semester (Fall)		Semester Credits
WTT	213	Electronics II 4
WTT	217	Intro to PLCs 3
WTT	225	Utility Safety 2
WTT	230	Field Training III 0.5
		Communications Elective 3
		Behavioral Science Elective 3
		15.5

Fourth Semester (Spring)		Semester Credits
WTT	214	Theory of Power Generation 4
WTT	220	Composites 4
WTT	231	Field Training IV 0.5
WTT	240	SCADA Concepts 2
BUS	216	Spreadsheet Concepts & Applications 2
		Social Science Elective 3
		15.5

Total Credits Required to Graduate (Two-Year AAS): 65.5





Mitchell Technical Institute

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Online Programs Offered

Online Courses

At Mitchell Technical Institute, we understand the challenges faced by many students. Whether it's juggling a job, a family, or a life that is full of various demands, reaching your educational goals may have had to take a back seat. MTI is committed to helping you reach your goals by offering a suite of online programs to fit your needs.

The following pages outline our Online Certificate, Diploma and Associate Degree programs. All of our programs can be taken *completely* online within the typical one to two-year time frame, or you can create an individualized learning plan to best fit your needs. (Programs including an internship, clinical or fieldwork experience will require you to travel to the employment site to complete the course.)

As an online student, you can study from home, the office, or an Internet café — anywhere you can find a connection to the Internet. Through MTI online programs, you can work towards earning a degree while living your life. Our online options have been designed for flexibility, so you can schedule classes to fit your life. We've built an online college with the support and resources students need to be successful.

What distinguishes our online learning option is that the quality of our online education is the same as the one you'd receive in class on our campus. We recognize the challenges that you face as an online learner and it is our goal to provide you with the same opportunities to learn and connect with your instructor and fellow students outside of a traditional classroom.

Each instructor designs his course around a standard format so if you take multiple courses with different instructors, you will be familiar with basic course

expectations. However, each instructor also adds his personality to the course so you will see different things from different instructors. You can expect the following from every online course you take at MTI:

1. Syllabus: A complete syllabus posted online and in a downloadable format.
2. Handouts: Study guides, helpful pages, lecture notes- each class has a place for these types of communication and educational aids.
3. Powerpoints: Each lecture is captured in a Powerpoint for you to view. Some instructors will add voice threads to the slideshow.
4. Coursework: All assignments can be completed online. All assignments are located on one page so you can easily see what is due as well as what is coming up.
5. Gradebook: All grades are entered in the online gradebook so with a simple mouse-click, you know where you stand in the class.

Unlike a traditional course where you see the students and instructors several times a week, an online college degree course is totally self-directed. That means that you complete assignments on your schedule throughout the week. Taking an online course is "working-on-your-own-time," not "working-at-your-own-pace." Students must meet deadlines and move through the course at the pace the instructor establishes. It is up to you to keep up with the coursework and get assignments turned in on time.

Students in online programs will be required to enroll in a one-credit online seminar the first semester. This seminar formalizes your contact with your instructor and peer group. It's a way for you to keep on track and in touch, regardless of distance.

Please note: There are certain technology requirements for online programs including, but not limited to:

- A desktop or laptop computer with an Intel Core 2 Duo processor or better
- A hard drive with 320 GB 5400 rpm
- An integrated camera
- An Internet connection advertised as high speed (cable, DSL, etc.)
- Microsoft Office 2013 Professional Edition Suite (available at a reduced cost in the MTI Bookstore)



If you are looking for an online program, look for this symbol.



Administrative Office Specialist

The Administrative Office Specialist program prepares students to perform general duties in an executive or professional office setting. This set of important office skills may be applied to many types of businesses, ranging from small, owner-operated businesses up to major corporations.

Duties may include preparing reports and other documents using word processing, spreadsheet, database or presentation software; assisting with marketing duties; researching and preparing reports; coordinating and assisting with general office

duties; interacting with customers; and general bookkeeping support. Combining computer software support skills needed in any office setting with a sampling of business classes, this program will help students find employment in almost any office support environment.

Prerequisite: To enroll in this program, the student must be a graduate of either the Office Technology Specialist or Small Business Management programs offered by MTI.

Award: One-Year Diploma or AAS Degree

First Semester		Semester Credits
BUS	110	Accounting for Business I 4
BUS	216	Spreadsheet Concepts and Applications..... 3
CSS	120	Outlook Essentials 2
CSS	143	Document Production 3
SSS	101	Online Seminar I 1
		13

Second Semester		Semester Credits
BUS	111	Accounting for Business II 4
BUS	204	Customer Service 3
CSS	170	Desktop Publishing 3
CSS	171	Multimedia Concepts 3
		13

Third Semester		Semester Credits
BUS	217	Database Concepts & Applications 3
CSS	203	Web Essentials..... 3
		Communications Elective 3
		Math Elective 3
		12

Total Credits Required to Graduate Diploma: 38

Fourth Semester (AAS)		Semester Credits
BUS	101	Intro to Business 3
BUS	120	Principles of Marketing..... 3
BUS	214	Principles of Insurance 3
Electives (choose one)		
BUS	170	Entrepreneurship & Small Business Management 4
BUS	210	Sales & Advertising 3
		12

Fifth Semester (AAS)		Semester Credits
ACCT	221	Accounting Software Applications..... 3
BUS	100	Personal Finance..... 3
BUS	140	Business Law 3
BUS	220	Supervisory Management..... 3
		12

Sixth Semester (AAS)		Semester Credits
BUS	122	E-Commerce..... 3
		Behavioral Science Elective..... 3
		Social Science Elective 3
		9

Total Credits Required to Graduate with AAS: 71

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Advanced Medical Imaging

The Advanced Medical Imaging program delivers online coursework and provides a framework for didactic experience in magnetic resonance imaging and computed tomography to prepare students to become certified technologists in these advanced imaging modalities.

Magnetic Resonance Imaging (MRI) technologists operate MRI scanners, which use radio frequencies and strong magnetic fields to create a cross-sectional image of a patient's body, which are then used by a radiologist to aid in making an accurate diagnosis. Computed tomography (CT) is an advanced form of diagnostic imaging where technologists use x-rays and computers to produce cross-sectional anatomical images of the human body for diagnostic testing, radiation therapy treatment planning, and nuclear medicine PET scanning.

Graduates of the program will be didactically prepared to sit for either the ARRT Advanced Registry in Magnetic Resonance Imaging or the ARRT Advanced Registry in Computed Tomography or both.

Please note: The program is open to ARRT-registered technologists in Radiography, Nuclear Medicine Technology or Radiation Therapy or those who are registry eligible.

Award: Certificate

Computed Tomography (CT)		Semester Credits
AMI 210	Cross Sectional Anatomy & Pathology	4
AMI 240	CT Physical Principles	3
AMI 242	CT Imaging Strategies.....	3
		10
OR		
Magnetic Resonance Imaging (MRI)		Semester Credits
AMI 210	Cross Sectionals Anatomy & Pathology	4
AMI 250	MRI Physical Principles	4
AMI 252	MRI Imaging Strategies	4
		12

Total Credits Required for Certificate: 10/12

Award: Advanced Certificate (18 credits)

The student seeking a diploma must complete all of the required courses in both the Computed Tomography and Magnetic Resonance Imaging modules:

AMI 210	Cross Sectionals Anatomy & Pathology	4
AMI 240	CT Physical Principles	3
AMI 242	CT Imaging Strategies.....	3
AMI 250	MRI Physical Principles	4
AMI 252	MRI Imaging Strategies	4
		18

Total Credits Required for Diploma: 18

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Medical Office Professional

A skilled Medical Office Professional is an invaluable asset to any medical office, working effectively with medical professionals and patients while performing assorted office duties. With the number of health care procedures escalating every year as the population ages, there's a high demand for skilled specialists in patient information technology and medical billing and reimbursement. Medical Office Professionals (MOP) are the experts on patient data that doctors, nurses and other providers rely on to perform their jobs.

Medical records and health information technology professionals can expect to be in high demand in the health sector during the next 20 to 30 years. In fact, the Bureau of Labor Statistics projects health information technology will be one of the 20 fastest growing occupations in the U.S.

Career opportunities in these areas include Medical Receptionist, Medical Records Clerk, Medical Information Management Clerk, Health Information Management, Medical Claims Clerk, Medical Claims Processor, Medical Claims Analyst and more.

Admission Requirement: All students accepted to the program must submit to a criminal background check at the student's expense. Details are available from the Admissions office.

Program Graduation Requirement: Students must earn a grade of C or higher in all program courses as a prerequisite to MOP 290. Students must earn a grade of C (2.0) or higher in their clinical internship in order to graduate. Students must also complete a basic life support course (CPR/First Aid) and provide proof of certification in order to graduate.

Award: AAS Degree

First Semester		Semester Credits
BUS	110	Accounting for Business I
MA	101	Medical Terminology.....
MA	103	Anatomy/Physiology.....
SSS	101	Online Seminar I.....
		12

Second Semester		Semester Credits
MOP	130	Computers in the Medical Office
MOP	160	CPT/ICD-10/CM Coding
BUS	111	Accounting for Business II.....
CIS	105	Complete Computer Concepts
		13

Third Semester		Semester Credits
MOP	230	Medical Office Administration.....
MA	123	Pathophysiology.....
MA	162	Medical Law & Ethics.....
		Math Elective
		11

Fourth Semester		Semester Credits
MOP	206	Transcription I
MOP	210	Medical Insurance and Billing
MOP	260	Advanced Coding I.....
		Communications Elective
		14

Fifth Semester		Semester Credits
MA	210	Pharmacology & Admin of Medicine.....
MOP	262	Case Study Coding.....
		Social Science Elective
		Behavioral Science Elective.....
		12

Sixth Semester		Semester Credits
MOP	212	Electronic Medical Records.....
MOP	290	Clinical Internship
		11

Total Credits Required to Graduate: 73

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Small Business Management

In today's fast-paced business world, the small business manager often needs specialty skills to make a business succeed. Using the flexibility of online education, the Small Business Management program will provide business owners with a set of foundational skills that will help strengthen their businesses. Courses are general and applicable to any type of small business. Take the program completely online or attend traditional courses on the MTI campus.

If you wish to continue, you may earn an AAS degree in Administrative Office Specialist with three additional semesters of coursework.

Award: One-year Diploma

First Semester		Semester Credits
BUS 110	Accounting for Business I	4
BUS 210	Sales & Advertising	3
CSS 120	Outlook Essentials	2
CIS 105	Complete Computer Concepts	3
SSS 101	Online Seminar I	1
		13

Second Semester		Semester Credits
ACCT 221	Accounting Software Applications	3
BUS 111	Accounting for Business II	4
BUS 216	Spreadsheet Concepts and Applications	3
BUS 220	Supervisory Management	3
		13

Third Semester		Semester Credits
BUS 122	E-Commerce	3
BUS 170	Entrepreneurship & Small Business Management	4
	Communications Elective	3
	Math Elective	3
		13

Total Credits Required to Graduate: 39

Optional AAS Degree (Administrative Office Specialist)

Fourth Semester		Semester Credits
BUS 101	Introduction to Business	3
BUS 120	Principles of Marketing	3
BUS 214	Principles of Insurance	3
CSS 143	Document Production	3
		12

Fifth Semester		Semester Credits
BUS 140	Business Law	3
CSS 122	Customer Service	3
CSS 170	Desktop Publishing	3
CSS 171	Multimedia Concepts	3
		12

Sixth Semester		Semester Credits
BUS 217	Database Concepts and Applications	3
CSS 203	Web Essentials	3
	Behavioral Science Elective	3
	Social Science Elective	3
		12

Total Credits Required to Graduate: 75

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Speech-Language Pathology Assistant

One in six Americans has a speech, hearing or language disorder. These disorders affect infants, children, adults and the elderly. A communication disorder may affect a person's ability to pronounce sounds intelligibly, to understand what is being said, to process and remember spoken information, to use appropriate vocabulary and grammar, to speak fluently without stuttering, or to use his or her voice appropriately. Accidents, illnesses, birth defects and substance abuse can all contribute to communication disorders. These disorders isolate people from their friends, family and the community and limit job and educational opportunities. Speech-Language Pathology Assistants help these individuals to recover their ability to speak, understand and interact with others.

This online program is offered for either a two-year or three-year plan, depending upon the student's needs.

Graduates of the SLPA program will serve as support personnel to perform tasks prescribed, directed and supervised by certified speech-language pathologists.

Requirements for Speech-Language Pathology Assistants (SLPAs) vary from state-to-state. MTI will attempt to determine whether our coursework will meet your state's requirements, but this is not possible in all cases. Please contact the program director to discuss your state's requirements. MTI strongly encourages prospective students to verify that MTI's coursework will meet their state's requirements. The American Speech-Language-Hearing Association website has information regarding state requirements on their website at <http://www.asha.org/advocacy/state/info/>.

Admission Requirements: All students accepted to the program must complete a criminal background check at the student's expense. Details are available from the Admissions office. Students are required to have good reading, writing, hearing and communication (verbal, written and articulation) skills in order to competently perform the job of a speech-language pathology assistant and to gain successful employment. Students must possess the motor skills necessary to manage clients and manipulate therapy materials in home and school environments. Applicants must have minimum scores on the English and Reading portions of the ACT or AccuPlacer.

Additional requirements may have to be met before entrance to fieldwork sites. Contact the instructor for details.

Note: Students in this program are required use an iPad. The student must purchase the iPad at his/her own expense. Specific software apps will also be required. Information about required apps will be provided as part of each course syllabus.

Program Graduation Requirement: It is the goal of this program to prepare competent entry-level speech-language pathology assistants. To achieve that goal, students must earn a grade of C (2.0) or higher in all technical courses as a prerequisite to SLPA 240 Clinical Fieldwork. Students must earn a grade of C (2.0) or higher in their clinical fieldwork in order to graduate.

Award: AAS Degree

First Semester		Semester Credits
SLPA	101	Intro to Speech-Language Pathology Assistant..... 3
SLPA	104	Anatomy/Physiology of Speech/Hearing..... 3
SLPA	105	Speech and Language Development..... 3
SLPA	106	Introduction to Phonetics..... 3
SSS	101	Online Seminar I..... 1
MATH	101	Intermediate Algebra..... 3
		16

Second Semester		Semester Credits
SLPA	102	Clinical Observation I..... 1
SLPA	103	Career Seminar..... 1
SLPA	111	Intro to Communication Disorders and Treatment..... 3
SLPA	112	Child Growth and Development..... 3
SLPA	120	Voice and Articulation for Effective Communication..... 3
ENGL	101	English Composition..... 3
		14

Third Semester (Summer)		Semester Credits
CIS	105	Complete Computer Concepts..... 3
		Social Science Elective..... 3
		Behavioral Science Elective..... 3
		9

Fourth Semester (Fall)		Semester Credits
SLPA	200	Intro to Audiology and Aural Rehabilitation.. 2
SLPA	202	Clinical Observation II..... 2
SLPA	205	Adult Communication Disorders..... 2
SLPA	220	Speech Disorders and Intervention..... 3
SLPA	230	Language Disorders and Intervention..... 3
		12

Fifth Semester		Semester Credits
SLPA	210	Alternative and Augmentative Communication..... 2
SLPA	211	Screening Processes..... 2
SLPA	235	Clinical Management and Procedures..... 4
SLPA	240	Clinical Fieldwork..... 6
		14

Total Credits Required to Graduate: 65

Advanced Technical Education Admissions

Admissions Requirements

Any person 16 years of age or older is eligible to apply for admission, regardless of previous education. Applicants will be accepted into educational programs in which they demonstrate a reasonable prospect for success. The Institute reserves the right to admit applicants based upon previous academic achievements and life experiences.

To be accepted to an Advanced Technical Education program, students must meet the following admissions requirements and the requirements established for each program. ATE requirements are as follows:

- Applicant must provide **proof that he/she is a legal US resident** (driver's license, Social Security card, student visa, resident alien card, etc.).
- Applicants must have a **high school diploma or a high school equivalency certificate** (GED) for full-time admission. (High school students requesting dual credit status must receive approval.)
- Applicants must **complete the established application process** as listed.
- Applicants must meet the **requirements of each program**. (Program requirements are found in each program section of this catalog.)

If the program is fully enrolled, students will be placed on a waiting list.

Admission to MTI is open to anyone without regard to race, color, creed, religion, sex, handicap, economic status, national origin, or ancestry, in accordance with federal law.

How to Apply for Admission

Interested persons are invited to call, write or visit Mitchell Technical Institute. Offices are open Monday through Friday. Campus tours and presentations may be arranged. The staff can provide the necessary forms for admission to the Institute and the program of your choice.

Admissions Process

In order to be considered for admission to an Advanced Technical Education program, an applicant must complete the following requirements:

1. Submit an Application for Admission. The application form is available at the MTI campus and online on the MTI website.
2. Send an *official* copy of your academic records (high school transcript, college transcript or high school equivalency certificate). Your high school, the registrar of the last college you attended, or the testing center where you took the General Education Development test can provide copies of your academic records.
3. Provide MTI with a photocopy of a birth certificate, driver's license, or other legal document to certify age and resident status.
4. After acceptance to a program:
 - A start date will be identified.
 - Students will register for courses.

Students with Disabilities

All enrolled students with disabilities have equal access to all programs and activities at Mitchell Technical Institute offered in accordance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Most programs have minimum physical standards that students must meet. Individual program standards can be reviewed with an Admissions representative.

Required Immunizations

South Dakota state law (SDCL 13-49-27.1) states that immunizations are required for students entering public or private postsecondary educational institutions in South Dakota. "Public or private postsecondary institution" or "institution," is any entity permitted to offer postsecondary education credits or degrees in South Dakota. "Student" is any person born after 1956 who is registering for more than one class during an academic term such as a quarter or semester. The term includes any person who meets face-to-face at least once per week to receive instruction. The term does not include any person who receives non-credit-bearing or on-the-job training services.

Any student entering a public or private postsecondary education institution in this state for the first time after July 1, 2008, shall, within forty-five days after the start of classes, present to the appropriate institution certification from a licensed physician that the student has received or is in the process of receiving the required two doses of immunization against measles, rubella and mumps. As an alternative to the requirement for a physician's certification, the student may present certification from a licensed physician stating the physical condition of the student would be such that immunization would endanger the student's life or health; certification from a licensed physician stating the student has experienced the natural disease against which the immunization protects; confirmation from a laboratory of the presence of adequate immunity; or a written statement signed by the student that the student is an adherent to a religious doctrine whose teachings are opposed to such immunizations. If the student is under the age of 18, the written statement shall be signed by one parent or guardian.

Non-High School Graduates, Including Home-Schooled Students

Students who are home-schooled may be admitted to MTI with evidence of a high-school completion certificate/diploma from an accredited agency or school or with a GED. Home-schooled students will also be required to meet minimum requirements on the ACT. The Admissions Office will work with any home-schooled student to make sure that their MTI Application for Admission is complete.

Home School Entrance Requirements

Home-schooled high school students applying for admission into MTI have two options to meet the high school diploma requirement:

- 1) Provide a home-school high school record of completion and documentation of a completed GED and take the MTI's entrance assessment, meeting the required scores for the program
- OR
- 2) Provide a home-school high school record of completion that has been certified by an accredited outside educational organization and take the ACT entrance assessment, meeting the required scores for the program.

Non-Discrimination Statement

MTI does not discriminate in its employment of policies and practices, or in its educational programs on the basis of race, color, creed, religion, age, gender (including pregnancy), sexual orientation, disability, national origin, or ancestry, military/veteran status, genetic information or any other category protected by law in its education programs, admissions policies, employment policies, financial aid or other institute-administered programs.

Inquiries concerning the application of Title VI, Title IX or Section 504 may be referred to:

Vice-President
Mitchell Technical Institute
1800 E. Spruce St.
Mitchell, SD, 57301
Telephone (605) 995-3023

or to:

Kansas City Office
Office for Civil Rights
U.S. Department of Education
One Petticoat Lane
1010 Walnut Street, 3rd floor, Suite 320
Kansas City, MO 64106
Telephone: 816-268-0550
FAX: 816-268-0599; TDD: 800-877-8339
Email: OCR.KansasCity@ed.gov

Professional Truck Driving

The trucking industry is the lifeblood of the U.S. economy with nearly 70% of all the freight tonnage moved in the U.S. put on trucks. To move 9.2 billion tons of freight annually requires over 3 million truck drivers. The American Trucking Association (ATA) estimates 48,000 drivers are needed immediately, increasing to 200,000 by 2020.

Driving a Commercial Motor Vehicle (CMV) requires a higher level of knowledge, experience, skills, and physical abilities than those required to drive a non-commercial vehicle. Mitchell Technical Institute can provide the proper training to ensure that students graduate as qualified drivers to travel the roads of South Dakota and surrounding states. This program will adhere to standards set by the Professional Truck Driving Institute, the only certification recognized by the trucking industry.

Skilled and professional drivers are in demand and can expect good wages and benefits.

This 16-week certificate program will prepare students for employment in the transportation industry as entry-level, over-the-road tractor-trailer truck drivers. Students will practice all maneuvers associated with deliveries and yard jockeying, freeway driving, speed and space management, communication and emergency situations.

This program includes classroom theory, U.S. Department of Transportation rules and regulations, safety, and behind-the-wheel road driving practice. Students will also spend time in MTI's state-of-the-art driving simulator.

Any student who enrolls in this program must obtain a South Dakota driver's license in order to complete the CDL training course. A Class A CDL is a graduation requirement for this program.

Students enrolled in the Professional Truck Driving program are subject to pre-screen and random drug testing according to MTI administrative rules. Arrangement for the pre-screen will be made the first week of class and all students are subject to random testing throughout the semester. If you have any questions about federal DOT requirements for employment with a motor carrier, visit the Federal Motor Carrier Administration website at <https://www.fmcsa.dot.gov/>.

Award: Certificate

Semester Credits		
PTD	100	Permit Prep..... 1
PTD	104	Vehicle Control Systems..... 1
PTD	106	Vehicle in Motion..... 2
PTD	108	Entry Level Driver Basics..... 2
PTD	112	Trip Planning..... 2
PTD	116	Extreme Driving Conditions..... 1
PTD	118	Road Driving..... 3
PTD	190	Internship..... 6
		18

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Registered Apprenticeship (Power Line)

Mitchell Technical Institute is pleased to introduce the Power Line Registered Apprenticeship training program offered through the division of Advanced Technical Education. This registered apprentice program will allow MTI graduates to pursue Journeyworker status within their energy career, framed within a formalized, recognizable structure.

Completers of the program are awarded a Journeyworker certificate from the US Department of Labor and Apprentice Graduate Certificate from Mitchell Technical Institute.

As a recognized sponsor, MTI is able to provide the curriculum necessary for apprentices to reach Journeyworker lineman status, track and report their hours within the required work processes and, if needed, train them on campus for specific skills.

Students are considered a pre-apprentice upon entering the full time Power Line Construction and Maintenance program at MTI. The courses they complete during their first year of enrollment, along with the field training and lab activities, will allow them to advance to a Year Two Apprentice after completing the requisite number of on-the-job hours, typically 1,000, following graduation.

Award: Certificate

Year 2

APPL	202	Advanced Electrical Circuits	4
APPL	292	Internship II.	4

Year 3

APPL	230	Advanced Power Grid	4
APPL	293	Internship III	4

Year 4

APPL	204	Journey Lineworker Preparation	4
APPL	294	Internship IV	4

Please note: Course descriptions are not yet available for this program. Check the website for frequent updates.

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South Dakota Center for Farm/Ranch Management

The South Dakota Center for Farm/Ranch Management (SDCFRM) is an individualized program where participants are able to work one-on-one with MTI Farm Business Management instructors. Instruction primarily takes place on-site at the participant's farm or ranch as well as occasional web-based or classroom sessions. Participants are trained in all aspects of financial management and recordkeeping as related to their ag operation. These skills are put into practice by the participants keeping their own business records, with the assistance of their instructor. At the end of each year, this data is compiled and analyzed by the instructor so each producer can review and use their data for planning and decision making purposes. Participants are also able to compare their data to state averages which are compiled by SDCFRM for the purpose of benchmarking. **All records are kept strictly confidential.**

Benefits to the participant of the program include: complete records of past years to review when making management decisions; records needed for filing yearly tax reports; development of a record management system for use with

lenders; an increased knowledge of the strengths and weaknesses of their operation; the ability to determine the business's exact financial progress in any one year; an ability to project profitability of individual enterprises; and development of a working understanding of cash flow, net worth and profit & loss statements. Each semester, students will enroll in a four-credit course which covers the recordkeeping component as well as relevant current industry topics. This program consists of six semesters of instruction.

SDCFRM is also a certified provider of the FSA Farmer Borrower Training program. This is a 20-hour on-campus or online course focusing on ag financial and risk management principals. FBM 100 – Financial Foundations meets the requirements for new FSA borrowers and is open to any producer who would like to take as an introduction to the program.

To enroll in this program, contact the South Dakota Center for Farm/Ranch management at (605) 995-7191, sdcfm@mitchelltech.edu or visit www.sdcfrm.com.

Award: Certificate

Basic Program

First Semester		Semester Credits
FBM 111	Fundamentals of Farm Business Management	4
Second Semester		Semester Credits
FBM 121	System Management Data & Farm Business Analysis	4
Third Semester		Semester Credits
FBM 131	Managing & Modifying Farm System Data.....	4
Fourth Semester		Semester Credits
FBM 141	Interpreting & Evaluating Financial Data	4
Fifth Semester		Semester Credits
FBM 151	Integrating Information for Financial Planning	4
Sixth Semester		Semester Credits
FBM 161	Examination of the Context System Management	4

Students who successfully complete a certificate in the Basic Program are eligible to enroll in **FBM 211 Special Topics**, an individualized course designed to assist the client in developing and evaluating a strategic plan for their farm or ranch business. This program is offered through the Advanced Technical Education division. Instructor approval required.

The best jobs
start here!

South Dakota Leadership Academy

Organizations increasingly recognize the need for professionals who possess the skills to function in the global economy and are ready to take on greater leadership and supervisory roles. Optimizing the leadership pipeline and closing the leadership gap depends on your organization's ability to choose and prepare the best leaders for tomorrow.

The South Dakota Leadership Academy is a one-of-a kind process specifically designed for building the character and competence of your developing leaders. Organizations define high-potential leaders who fit the profile for success within their businesses. The program blends professional instruction on MTI's campus, followed by online distance education, and an intra-company mentored internship to foster leadership development within the participant's organization. Those engaged in the process will draw upon their field experience and interaction with leaders from diverse organizations. Participants who successfully complete the program will receive a Certificate in Leadership Studies.

Participant Time Commitment

On site direct instruction, online application and instruction, time to learn and apply with mentor at organization

Mentor Time Commitment

Full day each semester at MTI; application and interaction with mentee at organization

Costs Related to Participating

\$6,000 per participant, plus travel, lodging and meals

Return on Investment

- Develop a competitive advantage in your organization by building a pipeline of talent.
- Improved understanding of organizational goals, business drivers and processes
- Direct application of leadership and business principles, behaviors, and techniques within the organization
- Networking, relationship building and sharing of best practices among peer organizations
- Extended knowledge and increased confidence to meet the leadership challenges of the organization
- Earn a Certificate in Leadership Studies, including 24 college credits
- A designated Mentor also enrolls and earns 4 college credits

An advisory board of experienced professionals from many fields will continue to provide program guidance.

The South Dakota Leadership Academy is constantly reevaluating to meet the changing demands placed upon leaders and organizations in today's climate of rapid change.

Award: Certificate in Leadership Studies

First Semester		Semester Credits
SDLA	200 Leadership Fundamentals.....	2
SDLA	206 Leadership Culture.....	2
SDLA	207 Resiliency for Leaders.....	2
SDLA	214 Talent Management	2
SDLA	298 Mentorship & Coaching I	4
		12

Second Semester		Semester Credits
SDLA	203 Managing Responsibility	2
SDLA	209 Courageous & inspirational Leadership	2
SDLA	215 Ethics at Work.....	2
SDLA	223 Crisis Management	2
SDLA	299 Mentorship & Coaching II	4
		12

Credits for Mentors

First Semester		Semester Credits
MEN	290 Mentorship & Coaching for Mentors I	2

Second Semester		Semester Credits
MEN	291 Mentorship & Coaching for Mentors II.....	2

Technical Studies

Mitchell Technical Institute now offers an Associate of Applied Science degree in Technical Studies. The degree is designed to be a flexible option for students seeking career advancement by earning an associate's degree: past graduates of technical institute diploma or certificate programs; individuals in the workforce, with or without formal postsecondary education, whose experience and skills gained on the job can translate to postsecondary credit; and others, with or without prior formal postsecondary education, whose career objectives cannot be met through the completion of any single technical program offered at one of the four technical institutes.

The Technical Studies AAS degree will provide South Dakotans a practical, efficient pathway to a college degree and the upskilling required for job advancement. The Technical Studies

degree is earned through completion of an existing technical institute diploma or approved certificate and completed by stacking a combination of credits awarded for general education and technical credits earned at the technical institute. The student has the ability to lattice into a customized degree by choosing courses in business or management or additional technical courses that will enhance the student's overall skills, certifications, and value in the workplace.

The student will be required to meet the minimum requirements of 25%, or the institute's requirement if higher, of their total program must be earned at the individual technical institute offering the degree.

Award: AAS

The curriculum will be custom-designed based on each individual student's career goals and past educational and job experience. The overall framework for the structure will include an existing approved diploma or certificate from an accredited school, and the remaining credits for technical and general education courses.

The degree is comprised of a minimum of 60 credits.

Technical Courses (30 credit hours minimum)

(Technical credits, as part of a required earned certificate or diploma from an HLC accredited institution, may be earned by a combination of technical courses and/or work experience demonstrated through documented and demonstrated assessments.)

General Education Courses (15 - 18 credit hours minimum)

(Students must meet the technical institute's A.A.S. degree general education requirements where they enroll in the Technical Studies program. Each Technical Institute may have different requirements.)

English elective	3
Math elective	3
Social Science elective	3
Behavioral Science elective	3
Computer elective	3

Elective Courses (12 - 15 credit hours minimum)

(The degree requires a minimum of 60 credits. Individualized plans of study will include the required 30 technical credits and 15- 18 general education credits, and at least 12-15 additional credits—technical or general electives—to meet the students' career objectives.)



Mitchell Technical Institute

The best jobs start here!



Course Descriptions

Course Descriptions

ACCT 110
PRINCIPLES OF ACCOUNTING I (4 credits)
 Provides knowledge of fundamental accounting standards, concepts and practices utilized in the preparation and analysis of financial reports for non-corporate and corporate business entities. Topics include business transactions and accounting records, the accounting cycle, financial statements, internal controls, current assets and liabilities, fixed assets and depreciation.

ACCT 111
PRINCIPLES OF ACCOUNTING II (4 credits)
 Continuation of ACCT 110. Topics include payroll, partnership and corporate accounting, investments, long-term debt, statement of cash flows, financial analysis and departmental accounting. Prerequisite: ACCT 110 with a grade of C or higher.

ACCT 118
TAX ACCOUNTING FOR BUSINESS (1 credit)
 Introduction to state and federal reports filed by businesses. Emphasis is on payroll, sales and excise tax reports. Computer application software is utilized. Overview of federal income tax law. Topics include types of business structures for tax purposes.

ACCT 212
INTERMEDIATE ACCOUNTING I (4 credits)
 Review of basic accounting concepts and principles, financial statements, the accounting process, cash and temporary investments, receivables, inventories and cost procedures. Statement of cash flows, the time-value-of-money inventory cost allocations, valuation procedures and estimation are discussed. Computer problems are solved using accounting software. Prerequisite: ACCT 111 with a grade of C or higher.

ACCT 213
INTERMEDIATE ACCOUNTING II (4 credits)
 Comprehensive overview of liability relationships and owner's equity. Accounting for corporations is discussed. The importance of accounting for long-term bonds and investments, leases, retained earnings and their distribution is presented. Accounting for pensions, revenue recognition and financial reporting are covered. The acquisition, utilization and retirement of operating assets is covered. Computer problems are solved using accounting software. Prerequisite: ACCT 212.

ACCT 214
COST ACCOUNTING I (3 credits)
 Accounting concepts, procedures and systems used in planning and controlling manufacturing business operations. Emphasis is placed on sources of cost information, maintenance of cost accounting records and cost accounting reports. Topics include accounting for materials, labor and factory overhead, job order costing and process costing systems. Prerequisite: ACCT 111 with a grade of C or higher.

ACCT 215
COST ACCOUNTING II (3 credits)
 Continuation of ACCT 214 with emphasis placed on the budgeting process and methods of analyzing cost accounting data for managerial planning and control purposes. Topics include process costing systems, budgeting, standard costing, direct costing and decision analysis techniques. Textbook problems and computer problems are used. Prerequisite: ACCT 214.

ACCT 216
GOVERNMENTAL REPORTING (2 credits)
 Examination of state and federal reports filed by business and non-profit entities. Emphasis is on payroll, sales and excise tax reports. Computer application software is utilized.

ACCT 217
GOVERNMENT AND NONPROFIT ACCOUNTING (3 credits)
 Introduction to concepts and practices of fund accounting for local governmental units and nonprofit organizations. Emphasis on fund structures, analysis and recording of transactions, preparation of financial reports is covered. Topics include local governmental unit funds, proprietary funds, fiduciary funds, account groups, hospitals and voluntary health and welfare organizations.

ACCT 218
TAX ACCOUNTING I (3 credits)
 Comprehensive study of federal income tax law. Major emphasis is on structure and administration of federal income tax law, preparation of individual income tax returns, supporting schedules and income tax planning procedures. Topics include gross income inclusions and exclusions, business and personal deductions, tax credits and property transactions. Prerequisite: ACCT 111 with a grade of C or higher.

ACCT 219
TAX SOFTWARE APPLICATIONS (1 credit)
 Various software packages are used in tax preparation exercises.

ACCT 221
ACCOUNTING SOFTWARE APPLICATIONS (2 credits)
 Computer programs used to produce reprints and solve problems. Quickbooks accounting software is emphasized. Prerequisite: ACCT 111 or BUS 110 with a grade of C or higher.

ACCT 290
INTERNSHIP (3 credits)
 Supervised internship performed off-campus in an accounting/finance setting.

AD 101
PRINCIPLES OF DRAFTING I (2 credits)
 Drawing methods in architectural drafting. Site planning and plot plans drawing are presented. Computer Aided Design (CAD) is introduced.

AD 102
PRINCIPLES OF DRAFTING II/CAD (2 credits)
 Continuation of AD 101. Coordinates design including electrical layout and mechanical planning. Emphasis is placed on zoning and traffic flow. Computer Aided Design (CAD) software is utilized.

AD 151
ARCHITECTURAL DRAFTING LAB I (4 credits)
 Use and care of drawing instruments, application of skills to basic engineering drawing of orthographic projection, sections, dimension techniques, pictorial drawings and plot plans.

AD 152
ARCHITECTURAL DRAFTING LAB II/CAD (3 credits)
 Drawing components of residential structures. Efforts directed towards precisely correlating the drawings completed in the drafting room with the building project under construction. CAD is emphasized.

AD 221
ADVANCED BUILDING PRINCIPLES (2 credits)
 Experience and instruction in concrete, advanced framing techniques and construction codes are taught. This course builds upon skills gained in introductory courses.

AD 242
PRINCIPLES OF COMMERCIAL DESIGN (2 credits)
Drawing commercial plans. Emphasis is placed on terminology, material, and typical fastening techniques.

AD 272
COMMERCIAL CONSTRUCTION DOCUMENTS (1 credit)
Working with and interpreting documents used in commercial construction. Includes commercial plans, details, and specifications.

AGT 101
ANIMAL SCIENCE I (3 credits)
Introduction to the livestock industry including organizations, product value, breeds and methods of individual and sire selection. Also includes production performances, animal environment, marketing strategies and management alternatives.

AGT 102
WEEDS AND HERBICIDES (3 credits)
Weeds, their identification, classification and types are studied. Chemical, biological and mechanical controls will be discussed. This section includes an overview of herbicide, fungicide and insecticide selection, rotation and timing of applications. Topics regarding the avoidance of weed resistance issues and methods to deal with resistant weeds will be discussed.

AGT 103
MACHINERY MANAGEMENT (2 credits)
Students will learn comparison methods and machinery economics to make decisions about purchase vs. lease vs. custom hiring arrangements. Attention will be placed on determining the right size equipment for the job, efficiency of equipment, as well as calculating depreciation costs on equipment.

AGT 104
AG CHEMICALS (2 credits)
Study of agricultural chemicals, pesticides and chemical applications. Equipment for liquid and dry chemicals, as well as non-chemical alternatives are studied. Preparation for the state commercial applicator exams. A passing score of 70% on each exam is a requirement for graduation from this program.

AGT 110
CROP SCIENCE I (3 credits)
The plant development stages of corn, soybeans, small grains and alfalfa. The importance of planting dates and seeding depths along with environmental factors will be discussed.

AGT 112
FERTILIZERS (3 credits)
Study of fertilizer types and elements, soil test results, fertilizer recommendations, blending calculations and costs per acre. Students will study nutrient requirements for major crops and learn to recognize nutrient deficiency symptoms.

AGT 120
SOIL SCIENCE I (3 credits)
The importance of soil, its formation, physical properties and land classifications. Soil sampling procedures will be explained and soil test results will be studied.

AGT 130
LIVESTOCK SELECTION (2 credits)
Study of beef, dairy, horses, sheep and swine evaluation, correlating body type to economical and efficient breeding stock production. Animal evaluation is performed on site for each species. Familiarizes students with available sources of sire information. Type, pedigree, performance, production (EPD and ratio), carcass, linear (dairy) and dollar data will be analyzed. Principles of carcass evaluation will be reviewed. Students should be able to evaluate the worth of a sire by the end of this course.

AGT 158
SMALL ENGINES (3 credits)
Introduction to the basic design and operating principles and components of the internal combustion engine. Topics to be explored include: valve train design and component identification, ignition and fuel system identification and design, similarities and differences between 2 and 4 stroke cycle engines, similarities and differences between air cooled and water cooled engines and component failure identification.

AGT 160
COMMODITY MARKETING (3 credits)
The study of the marketing of agricultural products using the CBOT/CME. Students will learn how to hedge grain and livestock using the different marketing choices associated with the cash market, futures market and options market (put and call options). Elevator contracts, as well as crop insurance, will also be studied.

AGT 180
AG PRODUCTION MANAGEMENT (2 credits)
Students are given the task of assisting with the MTI Land Lab. Decisions regarding ground preparation, planting, cultivating, spraying, harvesting, crop adjusting and marketing are all incorporated into the curriculum. In addition, students will work with the daily operations of a beef herd. Students will also work with the daily operations, health care, management and equipment used in a beef herd.

AGT 190
INTERNSHIP I (6 credits)
Supervised off-campus employment experience in an agricultural business related to livestock production, feed and animal health, livestock sales, agricultural crop protection products, insecticides, diseases, fertilizers and crop scouting procedures.

AGT 210
CROP SCIENCE II (3 credits)
Continuation of AGT 110. Crop improvement practices used to fulfill the growing need of global consumption. Environmental impacts and different cropping systems are analyzed. Plant diseases and their control along with insect identification and economic thresholds are studied. Students will study the uses of cover crops and their primary role in agriculture.

AGT 211
FARM ACCOUNTING (3 credits)
Study of farm accounting procedures as it relates to agricultural operations. Cash-basis accounting is taught through an accrual-adjusted system which will provide information for measuring the profitability of the farming operation. Ag software is discussed and evaluated to determine benefits of spreadsheet programs, records management and farm accounting programs.

AGT 212
AG CHEMICAL EQUIPMENT (2 credits)
Safe handling procedures for pesticides and proper loading and mixing of crop protection products are discussed. Proper use of liquid and dry application equipment and nozzle selection will be studied.

AGT 213
WELDING AND FABRICATION (2 credits)
An introductory course providing skills for entry-level welders. Specific projects will be related to agricultural applications, both on-farm and light commercial.

AGT 214
AG LAW (3 credits)
Topics of concern to the agri-business person are emphasized. Areas of study include contracts, trespass, taxes, land use laws, bankruptcy, partnerships, corporations, environmental laws and estate planning.

AGT 215
AG FINANCE (3 credits)
Study of the principles of agricultural finance and the types and uses of credit instruments. Topics covered will include time value of money, agricultural lending and financial statement analysis. Attention will focus on planning, analyzing and controlling business performance in agriculture.

AGT 218
PRINCIPLES OF AG BUSINESS (3 credits)
Introduction to the responsibilities of farm business entrepreneurship. Students are exposed to the four functional areas of management: marketing, finance, supply chain and human resources. Students learn to understand the role that managers play in planning, organizing, directing and controlling as related to agri-business.

AGT 220
SOIL SCIENCE II (2 credits)
Continuation of AGT 120. Soil organic matter and its functions in the soil are discussed. Water conservation, soil management and drainage or irrigation practices are covered.

AGT 223
BASIC BUILDING PRINCIPLES/ELECTRICAL (2 credits)
Selection of building materials and construction. The design and construction concepts of livestock, storage and feed handling facilities is presented. Basic farm wiring including calculation of wattage, voltage and wiring size.

AGT 240
LIVESTOCK REPRODUCTION (3 credits)
Study of young mammal development. Microscopic cell study, fetal development, genetics, artificial insemination, pregnancy testing and performance testing are discussed. Reproductive systems of swine, sheep, equine and cattle. Artificial insemination of livestock including pregnancy checking in cows. Students will get hands-on experience with ultrasound technology.

AGT 241
FEED UTILIZATION (2 credits)
Advanced study of feed stuffs and their value and use in rations, feed processing practices and poisons found in feed stuffs. Prerequisite: AGT 245.

AGT 242
LIVESTOCK DISEASES (3 credits)
Detailed study of livestock diseases, terms, symptoms, treatment and prevention of disease.

AGT 245
ANIMAL NUTRITION (2 credits)
Basic animal nutritional requirements and how various food stuffs can be used to meet those demands. Computation of rations for various species.

AGT 260
ADVANCED COMMODITY MARKETING (3 credits)
Continuation of AGT 160. Students will apply an array of concepts to simulations and case studies involving the buying and selling of commodities.

AGT 261
AG SALES AND SERVICE (3 credits)
Development of skills needed by an agricultural salesperson including prospecting, territory management, customer service and communication. An investigation of the agricultural sales process, marketing and advertising methods are studied.

AGT 263
FUNDAMENTALS OF INSURANCE (2 credits)
Course will focus on various types of insurance including life, health, homeowners, auto, property, casualty, liability, crop and livestock insurances.

AGT 290
INTERNSHIP II (6 credits)
Supervised employment experience. Work in an agricultural business related to livestock production, feed and animal health sales, livestock buyers, agricultural chemical and fertilizer sales and applications.

AGT 291
LAND MANAGEMENT (1 credit)
Students are given the task of managing the 80-acre MTI land lab. Decisions regarding ground preparation, planting, cultivating, spraying, harvesting and marketing are all incorporated into the curriculum.

AGT 295
BEEF MANAGEMENT (1 credit)
Prepares students for livestock ranching and ranch management. Begins with the basics of animal husbandry working with the daily operations of a beef herd. Daily decisions involving rations, selection of bulls and heifers to be marketed, proper selection of vaccines.

AGT 296
CALVING MANAGEMENT (1 credit)
Designed to instruct students in calving management including dystocias, diseases of calves, prolapses, navel care, synchronizing and bull selection and care.

AMI 210
CROSS-SECTIONAL ANATOMY AND PATHOLOGY (4 credits)
Anatomy and pathology necessary for the technologist to perform effectively in CT and MRI imaging modalities. Anatomic structures of the head, neck, spine, thorax, abdomen, pelvis and extremities are taught in cross-sectional axial, sagittal and coronal orientations. The pathologies commonly seen in these same anatomic areas are explored to the degree a technologist would require within their scope of practice.

AMI 240
CT PHYSICAL PRINCIPLES (3 credits)
An introduction into the fundamental principles and historical perspectives of computed tomography. Student will learn about CT instrumentation and image production. The course also teaches the basic and advanced visualization tools in CT systems, and how they are used for image post-processing and display. Finally the student will learn the factors that affect CT image quality, understand the tradeoffs involved in selecting different scanning and reconstruction parameters, and identify types, causes and strategies to reduce CT image artifacts.

AMI 242
CT IMAGING STRATEGIES (3 credits)
Theory and technique for the safe, ethical and efficient performance of CT exams. It begins with the principles of radiation protection, and the administration of contrast agents. Industry standards for scanning techniques and procedures are described for procedures of the head, neck, spine, thorax, abdomen, pelvis, and extremities. The course also addresses scanning considerations for pediatrics, PET CT and special procedures.

AMI 250
MRI PHYSICAL PRINCIPLES (4 credits)
Physical principles involved in basic MRI scanning. It begins with fundamental explanations of magnetism as they apply to medical imaging. Student will learn about instrumentation and image production. Image quality parameters and tradeoffs are explained. Student will understand basic pulse sequences, distinguish how they differ, and determine when they are best employed. Students will also learn the basics of vascular and functional magnetic resonance imaging sequences.

AMI 252
MRI IMAGING STRATEGIES (4 credits)
Theory and technique for the safe, ethical and efficient performance of MRI exams. It begins with the principles of MRI safety, and the administration of MRI contrast agents. Industry standards for scanning techniques and procedures are described for procedures of the head, neck, spine, thorax, abdomen, pelvis, and extremities. In this class, students will demonstrate their understanding of how the physical principles of MRI apply to safe, diagnostically effective imaging exams.

BC 121
PRINCIPLES OF BUILDING CONSTRUCTION I (4 credits)
Basic safety, operation and maintenance of hand tools, power tools and miscellaneous equipment. Construction of a residence is taught in shop. Included are layout and frame, finish (exterior), insulation (interior and exterior) and hanging, taping and texturing.

BC 124
PRINCIPLES OF GREEN BUILDING (2 credits)
Interior finish work of a residential house. Emphasis is on materials and processes involved with completing the interior, providing a solid background in green building methods, as well as the tools to inform consumers of the benefits of green construction.

BC 130
CABINETRY (2 credits)
Basic principles of cabinet construction. Lab projects will include construction of cabinets for the MTI shop house.

BC 151
BUILDING CONSTRUCTION LAB I (4 credits)
Basic principles of framing a residential house. Use, purchase and maintenance of hand tools and power tools are emphasized. First aid, fire equipment and scaffold safety is stressed. Interior/ exterior insulation and interior dry wall taping are taught.

BC 152
BUILDING CONSTRUCTION LAB II (4 credits)
Study of the materials and processes involved interior finishing.

BC 162
POST FRAME STRUCTURES (1 credit)
Understanding the building process. Students will gain experience assembling a post frame structure.

BC 190
COMMERCIAL CONSTRUCTION INTERNSHIP (6 credits)
On-the-job work experience on a commercial construction site utilizing specialty skills in steel, masonry, concrete and other uniquely commercial techniques.

BC 222
CONSTRUCTION EQUIPMENT (1 credit)
Practical experience operating construction equipment. Topics covered include forklift, skid loader, fall protection and total station.

BC 251
BUILDING CONSTRUCTION LAB III (7 credits)
Details of foundation construction, framing and exterior finish.

BC 252
BUILDING CONSTRUCTION LAB IV (6 credits)
Provides training and experience in the completion of a residential structure with emphasis on interior finish and millwork.

BC 261
COMMERCIAL CONSTRUCTION LAB (2 credits)
Practical experience assembling a small commercial building, working with materials typically associated with commercial construction.

BC 270
PRINCIPLES OF CONTRACTING (3 credits)
The basics of owning a small business including estimating from building plans.

BC 282
WELDING (2 credits)
Practice in arc welding. Cutting and brazing are covered, including steel welding. Practical experience with welding projects unique to commercial construction. Welding safety practices are stressed.

BEP 105
AGCO SERVICE CENTER FUNDAMENTALS (2 credits)
Introduction to the basic principles and working environment of an AGCO agricultural equipment service center. Topics to be explored include: the proper use and care of hand and basic power tools, the use of precision measuring tools, test equipment and special tools, safe and proper use of small jacks and cribbing as well as large shop tools such as hydraulic presses and overhead cranes. General shop safety, hazardous materials handling, MSDS sheets and information relating to all aspects of EPA and OSHA compliance will be discussed in detail. Students will learn the language and vocabulary related to the Agricultural Equipment service industry including work order generation, parts look-up, scheduling and billing techniques. Customer relations skills centered around both outside and inside sales and general working relationship development within an organization will be explored. The cornerstone of these soft skills will be the Butler machinery mission and company culture statements.

BEP 107
FUNDAMENTALS OF HYDRAULICS (2 credits)
Fundamental theories of fluid dynamics and basic laws of physics governing the non-compressible nature of liquids will be the foundation of this course. Pascal's law, Bernoulli's principle and fluid mechanics will be explored utilizing modern hydraulic engineering trainers allowing students to build models which demonstrate the principles and theories discussed during the lecture portion of this course. Component identification, design limits of components as well as expected performance based on load, flow and pressure will be key elements of the course. Open and closed center systems will be explored in depth.

BEP 120
DIESEL ENGINE AND CONTROL SYSTEMS (3 credits)
This course will introduce the student to the diesel engine and the mechanical control systems commonly used in their operation. Students will learn the design and operating principles which make diesels different from spark ignition engines and develop a diagnostic technique for working with them based on this knowledge. Internal components, wear tolerances, operating characteristics and fuel delivery systems for the common diesel engine brands utilized in the Ag equipment industry will be explored. Safety practices, tool selection, component identification and failure mode analysis will be fundamental topics in this course.

BEP 121
AGCO/SISU DIESEL ENGINE AND CONTROL SYSTEMS (3 credits)
Students will be able to experience firsthand the changes that have occurred within the diesel engine industry due to the advancements in microcomputer and electronics technology. HPCR (High Pressure, Common Rail) fuel systems, HEUI injectors, as well as their respective control systems, will be discussed in detail. Fuel and engine monitoring, sensor operation, variable displacement turbochargers and other factors relevant to emissions will be focal points of this course. The student will develop basic diagnostic procedures and an entry level understanding of DTC information which is fundamental to modern diesel engine failure diagnosis. At the conclusion of this course the student will have the opportunity to complete the ASE Diesel Diagnostics Certification exam.

BEP 130
ELECTRICAL/ELECTRONIC SYSTEMS (2 credits)
Course is based around general electrical theory and the principles of DC and AC current operating in modern Agricultural Equipment. Topics to be explored include: current flow, Ohm's law, voltage, amperage, circuit types, test equipment, symbols used in electrical diagrams, and reading and understanding electrical diagrams in technical publications. Electrical and Electronic systems and controller networks and diagnostic procedures will also be discussed.

BEP 150
INTERNSHIP I (4 credits)
Supervised Internship performed off-campus in an AGCO agricultural equipment service department at a participating dealer.

BEP 151
INTERNSHIP II (4 credits)
Continued supervised Internship performed off-campus in an AGCO agricultural equipment service department at a participating dealer.

BEP 161
AIR CONDITIONING SERVICE FUNDAMENTALS (2 credits)
Students will develop the skills and techniques necessary to diagnose and repair mobile automotive-style air conditioning systems found on today's modern agricultural equipment. Theories of system operation, components, and flow patterns will be discussed. Students will have the opportunity to earn their mobile air conditioning service certification during this course.

BEP 200
POWERTRAIN AND DRIVE SYSTEMS (3 credits)
Basic information relating to traditional dry and wet clutch technologies as well as basic gear box designs and hydrostatic drive systems. Torque, axle loading, differential drive design, hydraulic controls and power transmission through torque sensing drives will be explored. An understanding of theories relevant to load bearing capacities, horsepower limitations and drive engagement will be developed. Students will be introduced to current technology being utilized by major agricultural equipment manufacturing companies in both tractor and harvesting equipment construction. Focus will be on identifiable components and systems currently utilized by AGCO lines of equipment such as the Challenger or Massey Ferguson tractors or Gleaner combines.

BEP 206
TOP TECH CERTIFICATION/AED CERTIFICATION (1 credit)
Students will access the online AGCO service technician training system and participate in various distance learning modules that will culminate in the taking of certification exams. Certification exams will test basic knowledge and skill sets that the student should be proficient in from earlier training as well as information shared in the distance learning modules. Various levels of certification can be achieved and is an ongoing process that will continue once the student returns full time to the dealership.

BEP 210
AGCO ADVANCED FLUID POWER DYNAMICS (2 credits)
Advanced hydraulics course which utilizes variable displacement, pressure compensated hydraulic pumps, PWN valves and components common to current production AGCO agricultural tractors and equipment to aid students in developing diagnostic and repair skills necessary to become proficient technicians. Students will become familiar with hydraulic pump diagnostics, priority circuit identification, flow control system diagnostics and electronic valve calibration. Component identification and inspection as well as direct system operation in the lab setting are fundamental elements of this course. Hydrostatic drives and motors and drive systems will also be explored.

BEP 212
FUNDAMENTALS OF AGCO APPLICATION EQUIPMENT (2 credits)
Introduction to the AGCO Rogator and Terragator application equipment. Basic application systems, electronics, hydraulics and hydrostatic drive system service and diagnosis will be the focus of this course.

BEP 213
WELDING AND METALLURGY (2 credits)
Introductory course focusing on the basic heating, welding and cutting skills necessary in an agricultural equipment repair shop. Basic knowledge of metallurgy, proper weld placement and heat transfer issues will be discussed.

BEP 221
AGCO EQUIPMENT DIAGNOSTICS (3 credits)
Fundamental principles of mating attachments or drawn equipment electronically and hydraulically to AGCO combines and AGCO tractors, along with correct software downloads will be the basis of this course. Concepts such as CAN bus diagnosis, ECV and ICV calibration, header compatibility and hydraulic flow requirements will be developed. Students will also be able to determine proper harness and hose configurations and basic operating characteristics for these types of equipment. Students will be taught how to utilize available technical information from both service and sales manuals, as well as compatibility guides. In-depth utilization of the EDT and other electronic resources will aid students in the lab exercises. In field diagnosis of operating problems with planting and harvest equipment and the ability to determine a course of action to remedy the situation will be the elements of this course.

BEP 231
AGCO ADVANCED ELECTRICAL/ELECTRONIC DIAGNOSTICS (3 credits)
 Students will utilize "on-board" diagnostic systems as well as hand-held equipment and laptop computers programmed with EDT software to diagnose DTC information from tractors and harvesting equipment. Proficiency with technical data, DVOM operation and component location and identification will be fundamental aspects of the course. Common theories and operational principles learned in previous courses relating to electrical and electronic components, their testing and circuit diagnostics, will be revisited. Examples of these components would be potentiometers, hall-effect switches, thermistors, variable resistance sensors and relays. Students will develop their electrical/electronic diagnostic abilities by completing multiple activities designed to hone their critical thinking skills. This course is an active diagnostic lab course.

BEP 240
FUNDAMENTALS OF AGCO HARVESTING EQUIPMENT (3 credits)
 Students will explore the fundamentals of combine harvester operation, maintenance and repair. Basic machine wear component inspection, diagnosis and repair procedures will be topics of study in this fast-paced course. Students will learn the basics of machine adjustments and header equipment compatibility, as well as field operation. Different types of threshing and separating systems will be explored, how they differ in wear, and operating characteristics. AGCO Gleaner and Axial flow machines will be the focus equipment used in this training.

BEP 241
TRACTOR PERFORMANCE, TIRE AND TRACK SYSTEMS (3 credits)
 Modern agricultural tractors are precise technological pieces of equipment on today's farms and ranches. The need to properly equip and ballast these machines for peak performance in a customer's operation is paramount. Students enrolled in this course will utilize sales catalog information, test data, and practical application to ballast, set wheel spacing, adjust steering parameters, and engine and powertrain parameters on a given machine. Basic track and wheel system maintenance and adjustments will be covered in lab exercises.

BEP 243
FUNDAMENTALS OF AGCO SEEDING EQUIPMENT (3 credits)
 Students will learn the theories and principles behind the functional elements that make a row crop planter or air seeder work. Seed placement, seed singulation, seed furrow development, closing, firming and frame system management will be explored. Seed monitoring systems and equipment for variable rate placement will also be discussed. Diagnostics of planting system operations and equipment wear recognition will be key points of focus in this course. Components from AGCO planters and seeding tools will be utilized.

BEP 245
FUNDAMENTALS OF AGCO HAY EQUIPMENT (3 credits)
 The service and repair of modern AGCO brands of hay equipment will be the focus of this course. Students will learn the theories and practices of wear inspection, functional diagnosis, forming, wrapping and related hydraulic function issues that arise when customers operate hay harvesting equipment. Round balers, large square balers and mower/conditioners, and self-propelled windrowers will be the primary equipment utilized in this course.

BEP 250
INTERNSHIP III (4 credits)
 Supervised Internship performed off-campus in an AGCO agricultural equipment service department at a participating dealer.

BEP 251
INTERNSHIP IV (4 credits)
 Continued supervised Internship performed off-campus in an AGCO agricultural equipment service department at a participating dealer.

BUS 100
PERSONAL FINANCE (1, 2 or 3 credits)
 This course is designed to introduce students to the principles of individual and family financial management. Strategies for the development and attainment of short-term and long-term financial goals will be examined. The class will examine personal financial management based on a life cycle approach, while addressing the need for flexibility due to changing personal, social and economic conditions.

BUS 101
INTRODUCTION TO BUSINESS (3 credits)
 A survey of the business world covering business terminology, concepts and current business issues. The student will develop a business vocabulary, foster critical and analytical thinking and refine business decision-making skills. A major goal of this course is to help students become citizens who can contribute and compete in an increasingly global business environment. This course serves as a foundation for additional business subjects.

BUS 110
ACCOUNTING FOR BUSINESS I (4 credits)
 Fundamental accounting concepts and practices. Topics covered include business transactions and accounting records, the accounting cycle, financial statements, internal controls, current assets and liabilities, fixed assets, depreciation and payroll.

BUS 111
ACCOUNTING FOR BUSINESS II (4 credits)
 Accounting principles and procedures regarding notes, inventory, long-term assets, internal control and the concept of partnerships. Textbook problems and a practice set are used to enhance learning. Prerequisite: BUS 110

BUS 120
PRINCIPLES OF MARKETING (3 credits)
 Introduction to marketing concepts and terminology. Establishes the origins, roles, purposes and scope of marketing as a business process and activity. Introduction to the marketing environment, as well as the different aspects of the marketing mix: products, price, promotion and distribution, is presented.

BUS 122
E-COMMERCE (3 credits)
 In this course, students will study the three major driving forces behind E-Commerce, which include technology change, business development and social issues. Students will gain an understanding of the field through a conceptual framework.

BUS 140
BUSINESS LAW (3 credits)
 Review of business law terms and concepts applied to business. A background in legal rights, social forces, administrative agencies, government regulations and consumer protection is presented. Contracts, personal property and bailments are discussed. Law terms and definitions are learned.

BUS 170
ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (4 credits)
 In this course, students will learn about the challenges of entrepreneurship, different options for opening a business, how to write a business plan of their own, marketing issues and how to create a successful financial plan. Students will gain the tools to launch a new venture and the knowledge for entrepreneurial success.

BUS 204
CUSTOMER SERVICE (3 credits)
 The computer industry offers many rewarding careers, which can require a unique combination of hands-on skills, creative problem solving and an understanding of business needs. This course is a study of issues in the workplace relating to effective customer service. Students are introduced to the issues of problem solving, strategy, empowerment, communications, motivation and leadership necessary for the delivery of exceptional customer service and customer retention.

BUS 210
SALES AND ADVERTISING (3 credits)
 Principles of selling and skills required by today's sales and marketing professional. Students will develop a variety of skills including communication, critical thinking, building relationships with customers, and ethical decision making. This course introduces advertising via all media - print, digital, video, TV, Internet, etc., as well as consumer behavior and contemporary media issues.

BUS 212
PRINCIPLES OF MANAGEMENT (3 credits)
 Managers and professionals need both interpersonal and analytical skills to meet their day-to-day responsibilities. This course will provide information about such topics as decision-making, job design, organization structure, effective inventory management and information technology.

BUS 214
PRINCIPLES OF INSURANCE (2 or 3 credits)
 A basic study of insurances available in the market today. The major areas covered include the types of term and permanent policies, annuities, how much insurance is needed, policy provisions, riders and health insurance plans.

BUS 216
SPREADSHEET CONCEPTS AND APPLICATIONS (3 credits)
 Spreadsheet Concepts and Applications provides detailed instruction on the use of Microsoft Excel. Concepts covered include: working with formulas and functions; creating and formatting charts, graphs and pivottables/pivotcharts; sorting and filtering lists; data consolidation between multiple worksheets and workbooks; using Solver and the Scenario Manager; and importing and exporting of data. This course will help prepare the student for the Microsoft Excel certification exam.

BUS 217
DATABASE CONCEPTS AND APPLICATIONS (3 credits)
 Creation and design of databases and data base view sheets. The query process and the maintenance of databases are taught. The integration of databases into spreadsheet applications is utilized.

BUS 218
INTRODUCTION TO HUMAN RESOURCE MANAGEMENT (3 credits)
 Students will learn how an organization's efficiency is impacted by the effectiveness of its human resource department. Human resource planning, recruitment, selection, development, compensation and benefits will be explored throughout the course.

BUS 220
SUPERVISORY MANAGEMENT (3 credits)
 Many organizational trends today—downsizing, cost cutting, employee empowerment, flexible hours and diversity issues—are all impacting the way supervisors deal with employees in the workplace. Students will understand all of these concepts and working through people to maximize productivity while maintaining a positive work environment.

BUS 238
FINANCE (3 credits)
 This course is designed give students the opportunity to learn about the various aspects of Finance. Students will examine topics such as: credit ratings, financing assets, investments, banking services, along with many other financial tools.

BUS 240
CONSUMER BEHAVIOR (2 credits)
 This course will address factors that influence what and why consumers buy. Understanding consumer behavior provides is vital to goods and services providers to learn why consumers feel a need for a particular product, search for and find the intended information about that product. Applying an understanding of consumer behavior allows customers to evaluate products as the best alternative, buy the products and remain loyal to a product.

BUS 246
SOCIAL MEDIA (3 credits)
 This course explores the ever-changing world of social media and its impact on the business world. Students will explore emerging social media technologies and study their application in contemporary practice. Through hands-on learning, students will design, implement and measure a digital marketing strategy for a business while participating in social networks, forums, blogs, wikis, micro-blogs and more.

BUS 290
INTERNSHIP (3 credits)
 Supervised internship performed off campus in a business setting.

CA 105
INTRODUCTION TO THE COMMERCIAL KITCHEN (1 credit)
 Kitchen, meet the student. And student, the kitchen. Learn the ins and outs of working in a commercial kitchen from what is a buffalo chopper to where be the flour. Other topics include the safe assembly and disassembly of standard kitchen equipment for use and cleaning, how to hold and use your knives and their various purposes.

CA 107
CUSTOMER SERVICE (2 credits)
 Students will learn the cycle of service as it relates to the importance of the customer. This course discusses the difference between hospitality and service and outlines the four facets of high-quality customer service. Other topics covered are service-profit chain, suggestive selling, ensuring profit and ensuring consistent service value. Certification by NRAEF is required for completion of this course.

CA 110
MISE EN PLACE (1 credit)
 More than just a French term that few can pronounce correctly, the professional chef lives and dies by a good mise en place. Meaning "everything in place," this course will cover topics that will help prepare students for cooking/baking in professional manner. Students will learn how to create prep lists, as well as developing the ability to plan and organize a day's work.

CA 134
PROFESSIONAL BAKING CONCEPTS (3 credits)
 Cookies and breads, cakes and custards; these are a few of the areas students will be introduced to. Through a combination of lecture as well as hands-on experience, students gain an understanding of the how's and why's of the commercial bakery.

CA 135
BREAKFAST BISTRO (2 credits)
 Earn your toque pleats by learning the many different ways to cook an egg, along with all of the other breakfast foods. Breakfast cookery helps develop speed in the kitchen, while allowing quality to remain the focus. Prerequisite: CA 140, CA 145.

CA 140
FUNDAMENTALS OF PROFESSIONAL COOKING (4 credits)
 Combines lecture, demonstration and student participation in order to develop an understanding of the composition of various foods and the correct preparation methods with a focus on classic techniques. Purchasing quality food products, proper storage, service techniques and menu planning are also discussed.

CA 145
SERVSAFE (1 credit)
 Causes and prevention of food poisoning. Sanitation from the workers', customers', and supervisors' point of view are discussed. Hazard Analysis Critical Control Point (HACCP) system is utilized. Certification by NRAEF is required for completion of this course.

CA 147
CUSTOMER SERVICE LAB (2 credits)
 Face-to-face contact with the customer is oftentimes an overlooked part of a young culinarian's focus. Students will spend time preparing the dining room for Oak Room meal service, as well as wait tables and place orders with a point of sale (POS) system. Improved working relationships between front of the house and back of house are developed by understanding how both sides of the business are run. Co-Requisite CA 107 Customer Service.

CA 150
BANQUET QUANTITY FOOD PRODUCTION (3 credits)
 Consistently preparing high quality food in large quantities is key to the success of any foodservice establishment's banquet or catering operations. Roasts and steaks, soups and sauces, composed salads and much more will be covered in this course. On-site catering events including plated dinners and receptions will also take place as part of the educational aspect of this course. Prerequisite: CA 140, CA 145.

CA 155
BAKING APPLICATION (3 credits)
 Develop practical baking and pastry skills. Baking and decorating cakes as well as quick breads and yeast breads. Prepare a variety of desserts from aebleskivers to zeppoli. Prerequisite: CA 134, CA 145.

CA 165
CULINARY MATH (2 credits)
 Applied mathematical operations used to increase or decrease standard recipe yields, calculate food costs, convert recipe units of measure and calculate portion costs, as well as menu prices.

CA 166
FRONT OF HOUSE OPERATIONS (2 credits)
 The backbone of fine dining is presentation. This course will outline the different aspects of running the front of house in a fine dining operation; also covered will be the roles of server, maitre d, and pantry chef. Prerequisite: CA 107.

CA 188
HOSPITALITY MANAGEMENT (3 credits)
 This course is designed to prepare students for the many rewards and challenges of restaurant management including the "people side" of management. Effective communications, establishing harassment free workplaces, and building successful teams are three major areas of concentration. Certification by NRAEF is required for completion of this course.

CA 190
INTERNSHIP (6 credits)
 Experience in a commercial food service operation. Work in all areas of a commercial kitchen provides knowledge and skills of each position. The experience reveals the teamwork and responsibilities in a successful operation.

CA 200
NUTRITION (2 credits)
 Nutrition is the science of the nutrients in food and how they maintain the body. Students will learn the function of food ingredients and the aesthetic (flavor, texture and aroma) profiles of food to create dishes that are both creative and delicious. How people taste food and increased awareness of nutritional standards and guidelines are the basis for study of proteins fats and other lipids, carbohydrates and vitamins, minerals and water. Certification by NRAEF is required for completion of this course.

CA 210
HOSPITALITY ACCOUNTING (3 credits)
 Involves financial practices of a food service operation. Topics include budgeting, profit and loss statements, managing accounts receivable and accounts payable, and pricing. Certification by NRAEF is required for completion of this course. Prerequisite: CA 165.

CA 212
BAKE SHOP (2 credits)
 The bakery and pastry shop are responsible for the first and last impression on the diner. Hand-formed artisan breads and spreads, as well as decadent plated desserts. Prepare desserts will be based on current menu requirements, as well as featured dessert. Various layered and stacked cakes and decorating techniques covered. Prerequisite: CA 155.

CA 215
CULINARY CLASSICS (2 credits)
 The classics are the foundation upon which all other culinary skills are developed. This course will allow the student to develop their abilities in the on-campus restaurant, the Oak Room, using classic cooking techniques such as braising and sautéing.

CA 220
INTRODUCTION TO SOUS CHEF (2 credits)
 Planning and costing dishes to be featured in our Chef's Café. Placing orders, checking and receiving deliveries. Demonstration cooking, as well as helping give guidance and direction to fellow students.

CA 231
INTERNATIONAL CUISINE (2 credits)
 Sample different regional cuisines from around the world. Asian cuisines, African cuisines, European and Oceanic cuisines, along with the Cuisines of the Americas will all be visited.

CA 240
MENU PLANNING (1 credit)
 One of the most exciting and challenging parts of any chef's job is planning a menu. Chefs have limitless ideas, but it takes careful thought and foresight to pick out the ones that have potential. Students will use concepts learned to develop menus that are put to action in CA 260 Restaurant Concepts. Co-requisite: CA 260.

CA 245
MODERN CUISINE (3 credits)
 Beef stew that still has the flavor of a medium rare steak. Or ice cream frozen at -320° F. This course allows students to work with new equipment and techniques like using a hot water bath to make a memorable beef stew or liquid nitrogen for the ice cream. During this semester the Oak Room on-campus restaurant will serve modernist cuisine and modernized classics.

CA 255
PRACTICAL SUPERVISION (3 credits)
 Develop leadership skills with the help of a chef instructor. Take what you learned in Hospitality Management and put it to use in real life. Each student Sous Chef will take on the role of kitchen supervisor to allow for building real-world skill in various settings.

CA 260
RESTAURANT CONCEPTS (2 credits)
 Almost everybody has an idea for a restaurant. This course is designed to allow students the ability to see that dream come to life (sort of). Using menus they create in CA 240 Menu Planning, students will develop a concept, fine dining or bistro, gastro pub or New York deli and open a pop-up style restaurant in the Oak Room space. Co-requisite: CA 240.

CA 265
CULINARY EXPLORATION LAB (3 credits)
 This course will cover a wide variety of topics from charcuterie and butchery to chocolate and sugar decorations. With a combination of lecture and lab, students are introduced to many areas not covered in depth in other courses.

CHRD 104
SOCIAL DIVERSITY (3 credits)
 Provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. The socialization process, including social structure, social interaction, and social groups is examined in the context of how human society developed. Topics include race, ethnicity, deviance, gender, class, age, marriage and family, politics, education, religion, population, and social change. Upon completion, students should be able to analyze how cultural differences evolve and objectively evaluate those differences, thus enabling them to appreciate diversity in their workplaces and communities.

CIS 105
COMPLETE COMPUTER CONCEPTS (3 credits)
 Overview of computer applications with emphasis on word processing, spreadsheets, database, presentation tools and internet-based applications. This course will cover the Microsoft Office Suite, Skype for Business, and cloud-based technologies such as GoogleDrive/OneDrive.

COMM 151
MASS COMMUNICATION AND CULTURE (3 credits)
 A brief history of mass media and critical assessment of emerging technology and information delivery. Cultural, global and economic impacts of print and digital communication are examined. Legal and ethical uses of mass media are considered in context of personal/private, social, and career or workplace applications.

COMM 210
INTERPERSONAL COMMUNICATION (3 credits)
 Exploration of human interaction in face-to-face and computer-mediated situations. The focus of this course will be on helping students develop interpersonal skills to enhance their ability to communicate verbally and nonverbally using shared meaning in a variety of social contexts, such as in the workplace, with family, and in other social situations. This course provides intellectual, psychological, and experiential activities for developing interpersonal communication skills in common situations within our society.

CPR 100
FIRST AID, CPR AND AED (0.5 credit)
 This course will teach students to recognize an emergency, the appropriate action to take when facing an emergency situation and how to sustain life until professional help arrives. Topics covered include basic life support and AED use; heart attacks and chest pains; serious injuries; poisoning and allergic reactions; rescuing and moving victims and more. Students will also learn techniques for preventing disease transmission. This class is offered for credit as a Pass/No Pass course.

CSS 120
OUTLOOK ESSENTIALS (2 credits)
 Covers the features available in Microsoft Outlook, which is the industry's leading e-mail and personal information management software. Topics covered will include sending, receiving and organizing e-mails; managing the calendar, tasks, contacts and distribution lists; setting rules and creating meeting requests. This course will help prepare the student for the Microsoft Outlook certification exam.

CSS 143
DOCUMENT PRODUCTION (3 credits)
 This course will introduce word processing skills that can be combined with students' basic skills to create complex documents. Students will utilize Microsoft Word to create and format documents and tables; create mail merges, macros, templates and fill-in forms; set and manipulate tabs; insert charts, graphics and hyperlinks; and import and export data. Students will also look at different ways of sharing documents with others. This course will help prepare the student for the Microsoft Word certification exam.

CSS 170
DESKTOP PUBLISHING (3 credits)
 In today's technological world, many businesses are doing their own "in-house" publishing. This course will give our students the background and hands-on practice to be able to utilize the following software programs: Microsoft Publisher, Adobe InDesign and Adobe Photoshop. Emphasis is placed on creation of student projects including newsletters, brochures, posters and promotional materials as well as image manipulation. Principles of layout and design will be highlighted. Prerequisite: CSS 143.

CSS 171
MULTIMEDIA CONCEPTS (3 credits)
 This course provides detailed instruction on the use of a variety of software to create multimedia projects. The primary software packages to be utilized in this class include PowerPoint, Flash, Pinnacle Studio, Windows Movie Maker, PhotoStory, Audacity, Camtasia Studio, Jing and Windows Media Encoder. Prerequisite: CSS 143.

CSS 203
WEB ESSENTIALS (3 credits)
 Provides detailed instruction on the development, maintenance and publication of a Web site using HTML, Microsoft Expression Web and Adobe DreamWeaver. Other software utilized in this course includes PhotoShop. Prerequisite: CSS 143. Co-requisite/Prerequisite: CSS 170.

DPT 107
INTRODUCTION TO HYDRAULICS (2 credits)
 Fundamental theories of fluid dynamics and basic laws of physics governing the non-compressible nature of liquids will be the foundation of this course. Pascal's law, Bernoulli's principle and fluid mechanics will be explored utilizing modern hydraulic engineering trainers allowing students to build models which demonstrate the principles and theories discussed during the lecture portion of this course. Component identification, design limits of components as well as expected performance based on load, flow and pressure will be key elements of the course. Open and closed center systems will be explored in depth.

DPT 115
INTRO TO POWERTRAINS (2 credits)
Basic information relating to traditional dry and wet clutch technologies, basic gearbox designs and hydrostatic drive systems. Basic information on all types of bearing, belts and chain drive systems. An understanding of theories relevant to bearing load capacities, horsepower limitations and drive engagement will be covered and training on diagnosis. Students will be introduced to current technology being utilized on major agricultural equipment, lawn equipment and over the road truck and trailers equipment.

DPT 120
DIESEL ENGINE AND CONTROL SYSTEMS (3 credits)
This course will introduce the student to the diesel engine and the mechanical control systems commonly used in their operation. Students will learn the design and operating principles which make diesels different from spark ignition engines and develop a diagnostic technique for working with them based on this knowledge. Internal components, wear tolerances, operating characteristics and fuel delivery systems for the common diesel engine brands utilized in the ag equipment industry will be explored. Safety practices, tool selection, component identification and failure mode analysis will be fundamental topics in this course.

DPT 121
ADVANCED DIESEL ENGINE AND CONTROL SYSTEMS (3 credits)
Students will be able to experience firsthand the changes that have occurred within the diesel engine industry due to the advancements in microcomputer and electronics technology. HPCR (High Pressure, Common Rail) fuel systems, HEUI injectors, as well as their respective control systems, will be discussed in detail. Fuel and engine monitoring, sensor operation, variable displacement turbochargers and other factors relevant to emissions will be focal points of this course. The student will develop basic diagnostic procedures and an entry level understanding of DTC information which is fundamental to modern diesel engine failure diagnosis. At the conclusion of this course the student will have the opportunity to complete the ASE Diesel Diagnostics Certification exam.

DPT 130
ELECTRICAL/ELECTRONIC SYSTEMS (2 credits)
Course is based around general electrical theory and the principles of DC and AC current operating in modern Agricultural Equipment. Topics to be explored include: current flow, Ohm's law, voltage, amperage, circuit types, test equipment, symbols used in electrical diagrams, and reading and understanding electrical diagrams in technical publications. Electrical and Electronic systems and controller networks and diagnostic procedures will also be discussed.

DPT 161
AIR CONDITIONING SERVICE FUNDAMENTALS (2 credits)
Students will develop the skills and techniques necessary to diagnose and repair mobile automotive-style air conditioning systems found on today's modern agricultural equipment. Theories of system operation, components and flow patterns will be discussed. Students will have the opportunity to earn their mobile air conditioning service certification during this course.

DPT 201
GUIDANCE, STEERING AND VARIABLE RATE OPERATIONS (3 credits)
This course expands many of the concepts, theories and practices utilized in maintaining, diagnosing and operating GPS/GIS equipment and software necessary for variable rate, site specific application of product, as well as auto steer capabilities of equipment. Mechanical/electrical diagnostic and troubleshooting practices will be developed and the repair of harnesses and components will be explored. Students will also utilize mapping and data collection activities to develop prescriptions for product application. The understanding of the link between software utilization and map/prescription deviation will be a fundamental element of the software/prescription diagnostics portion of this class. Students will be directly involved in seeding and fertilizer applications to the MTI Land Lab by researching, developing and implementing the variable rate prescriptions that will be utilized during the spring seeding operation.

DPT 210
ADVANCED FLUID POWER DYNAMICS AND DIAGNOSTICS (3 credits)
This advanced hydraulics course will utilize variable displacement, pressure compensated hydraulic pumps, valves and components common to current production agricultural tractors and equipment to aid students in developing diagnostic and repair skills necessary to become proficient technicians. Students will become familiar with hydraulic pump diagnostics, priority circuit identification, flow control system diagnostics and electronic valve calibration. Component identification and inspection as well as direct system operation in the lab setting are fundamental elements of this course. Hydrostatic drives and motors will also be explored.

DPT 215
ADVANCED POWERTRAINS (2 credits)
Advanced information relating to traditional dry and wet clutch technologies as well as gearbox designs, manual transmissions, automatic transmissions and hydrostatic drive systems. Torque, axle loading, differential drive design, hydraulic controls and power transmission through torque sensing drives will be explored. An understanding of theories relevant to load bearing capacities, horsepower limitations and drive engagement will be developed. Students will be introduced to current technology being utilized by major agricultural and over the road equipment.

DPT 221
AG EQUIPMENT DIAGNOSTICS (3 credits)
The fundamental principles of mating attachments or drawn equipment electronically and hydraulically to combines and tractors will be the basis of this course. Concepts such as CAN bus diagnosis, ECV and ICV calibration, header compatibility and hydraulic flow requirements will be developed. Students will also be able to determine proper harness and hose configurations and basic operating characteristics for these types of equipment. Students will be taught how to utilize available technical information from both service and sales manuals, as well as compatibility guides. In field diagnosis of operating problems with planting and harvest equipment and the ability to determine a course of action to remedy the situation will be elements of this learning path.

DPT 231
ADVANCED ELECTRICAL/ELECTRONIC DIAGNOSTICS (3 credits)
Students will utilize "on-board" diagnostics systems as well as hand held equipment and laptop computers to access and diagnose DTC information from tractors and harvesting equipment. Proficiency with technical data, DVOM operation and component location and identification will be fundamental aspects of this course. Common theories and operational principles learned in previous courses relating to electrical and electronic components, their testing and circuit diagnostics will be revisited. Examples of these components would be potentiometers, hall-effect switches, thermistors, variable resistance sensors and relays. Students will develop their electrical/electronic diagnostic abilities by completing multiple activities designed to hone their critical thinking skills. This course is an active diagnostic lab course.

DPT 240
HARVESTING EQUIPMENT BASICS (3 credits)
Students will explore the fundamentals of combine harvester operation, maintenance and repair. Basic machine wear component inspection, diagnosis and repair procedures will be the topics of study. Students will learn the basics of machine adjustments and header equipment compatibility, as well as field operation. Different types of threshing and separating systems will be explored as well as how they differ in wear and operating characteristics.

DPT 241
TRACTOR PERFORMANCE AND SET-UP (2 credits)
Modern farm tractors are precise technological pieces of equipment on today's farms and ranches. The need to properly equip and ballast these machines for peak performance in a customer's operation is paramount. Student enrolled in this course will utilize sales catalog information, test data and practical application to ballast, set wheel spacing and adjust steering, engine and power train parameters on a given machine.

DPT 242
SALES AND MARKETING: PARTS AND AFTERMARKET (2 credits)
Marketing and inventory control in the parts department of any dealership has changed with the advent of technology and the global marketplace. Students who intend to be able to work in sales need to understand the basic concepts of product turnover, recovery, margins, marketing strategy and targeting customer base. This course will cover this information as well as fundamental ways that parts marketing impacts and affects the service department and the sales department of any dealership.

DPT 243
SEEDING EQUIPMENT FUNDAMENTALS (3 credits)
Students will learn the theories and principles behind the functional elements that make a row crop planter work. Seed placement, seed singulation, seed furrow development, closing, firming and frame system management will be topics of exploration. Seed monitoring systems and equipment for variable rate placement will also be discussed. Diagnostics of planting system operations and equipment wear recognition will be key points of focus in this fast-paced course. Components from all major manufacturers will be utilized in this course of study.

DPT 245
HAY EQUIPMENT FUNDAMENTALS (3 credits)
The service and repair of modern hay equipment will be the focus of this course. Students will learn the theories and practices of wear inspection, functional diagnosis, forming, wrapping and related hydraulic function issues that arise when customers operate hay harvesting equipment. Round balers, large square balers and mowers/conditioners will be the primary equipment utilized in this course.

DPT 290
INTERNSHIP (6 credits)
Supervised internship performed off-campus in an agricultural mechanic or service setting.

EC 100
BASIC TELEPHONY (3 credits)
Study the history of telecommunication from 1844 to today. Explain regulatory milestones. Understand the components of the telephone and telephone line. Study the basic telephone local loop and tests that are performed. Describe types of circuits to connect phone switches. Overview of data network infrastructure. Define modulation schemes and describe analog to digital conversion. Overview of data communications basics, OSI Model. Define Telecom Network Physical Infrastructure. Explain how voice networks operate, the evolution from analog to digital, an overview of the transition from circuit to packet switching. Introduction and identification of the components of the Outside Plant.

EC 105
TRANSMISSION MEDIA (3 credits)
Covers fundamental principles for cable installation and splicing. Topics include cable construction, (Fiber, Copper, Coax) basics of transmission media, color coding, cable closures and splicing of cable. Define copper cable transmission medium. Define fiber optic transmission medium. Define wireless transmission medium.

EC 112
ELECTRONICS THEORY (3 credits)
Introduction to the components of electronics, both passive and active are covered. Students study the fundamentals of power supply circuitry, solid state components, resistance, capacitance, inductance, AC theory, timing circuits and testing. Critical thinking skills and troubleshooting are also studied.

EC 120
TELEVISION/HEAD-END TECHNOLOGY (2 credits)
Students explore the history and basics of television distribution systems known as MATV, CATV and IPTV. Students will study Internet Protocol Television and the convergence of two technological revolutions, the Internet and digitization of television. IPTV system models and Internet protocols will be studied, as well as digital rights management and IPTV standardization efforts, including DOCSIS.

EC 121
DC/AC CIRCUIT (3 credits)
Direct Current (DC) theory and the fundamentals of series and parallel DC circuits. An introduction to the concept of electricity and its behavior with respect to conductors and resistance devices. The study of Alternating Current (AC) circuits begins with the generation of a sine wave and review of trigonometric functions and continues through resonance.

EC 130
NETWORK ESSENTIALS (3 credits)
Provides a solid understanding of how PCs and networks function. The aspects of networking computer systems and peripherals with an emphasis on serial communication will be addressed. The installation and configuration of hardware and software components to facilitate network operation and basic troubleshooting skills will be covered. Introduction to the concepts and components involved with networking computers for hardware and software sharing will be explored.

EC 138
CCNA I: INTRODUCTION TO NETWORKING (3 credits)
Introduces the architecture, structure, functions, components, and models of the Internet and computer networks. The principles of IP addressing and 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.

EC 142
INDUSTRIAL POWER ELECTRONICS (3 credits)
This course will introduce JFET's and MOSFET transistor operation and circuit configurations. Students will gain practical experience working with power control devices (thyristors) and control circuits, including rectifiers, inverters and PWM.

EC 151
ELECTRONICS LAB I (3 credits)
Hands-on instruction covering hand tools, safety, component identification, color codes, Ohm's law and reading schematic diagrams will be covered. Students will construct basic circuits, predict circuit values, and measure current voltage and resistance. Knowledge in the proper operation of electronic test equipment will be stressed. This lab will supplement the student of Theory and DC/AC classes.

EC 157
ELECTRONICS LAB II (3 credits)
Continuation of EC 151. Semiconductors and integrated circuits are discussed. Emphasis is placed on troubleshooting of audio amplifiers, discrete components and operational amplifiers. Basic digital circuits including logic gates, truth tables, flip flops and counters are explored. Prerequisite: EC 151.

EC 162
ELECTRONICS MATH/DIGITAL (2 credits)
General review of electronic mathematics. Algebra functions are used to solve formulas, trigonometry is used in AC circuit analysis and logarithms are used to analyze decibel gain and loss. The use of an electronic calculator and the solution of electronic problems are introduced. Introduction to binary notation and numbering systems including octal and hexadecimal.

EC 167
IT ESSENTIALS (3 credits)
Students learn the functionality of hardware and software components as well as suggested best practices in maintenance and safety issues. Students learn to assemble and configure a computer, install operating systems and software and troubleshoot hardware and software problems. This course helps students prepare for the CompTIA A+ certification.

EC 180
DATA CABLING (3 credits)
Structured cabling including horizontal and backbone cabling following the EIA/TIA 568B Standard is covered. Practical, hands-on exercises are assigned or cabling for MTI may be done as well. The remainder of the semester is used to cover Wireless LAN. In-depth coverage of wireless networks with extensive step-by-step coverage of IEEE 802.11b/a/g/n implementation, design, security and troubleshooting. Material is reinforced with hands-on projects from two of the principal wireless LAN vendors, Cisco and Linksys.

EC 181
VoIP/CABLING (3 credits)
Within this course students will explore the history and basics of the telephone industry. Students will study fundamentals of telecommunications and the convergence to Internet Protocol (IP), establish a knowledge base of Voice over Internet Protocol (VoIP), Session Initiation Protocol (SIP) the components, standards, jargon and buzzwords. Students will perform hands on structured cabling exercises - Category 5e, Category 6, 25 pair, cross connects to 66 and 110 block patch panels, fiber splicing, cable lacing, etc. Due to the changing nature of the Telecommunications industry, the instructor reserves the right to adapt course material as necessary throughout the course.

EC 210
INTRODUCTION TO VoIP (3 credits)
Explain the fundamentals necessary to understand VoIP, understand gateways and their capabilities, describe how phone calls are made on VoIP networks. Understand components, standards and architectures. Identify and explain key components, jargon, buzzwords, plus the main standards and protocols. Compare and contrast the many flavors of VoIP, implementation and architecture choices. Understand packetized voice, how it happens. Learn about codecs and compression, know the factors affecting sound quality. Examine carrier's IP network technologies and the important topic of using MPLS to implement Differentiated Services for Quality of Service (QoS). Discover Session Initiated Protocol, what it is, how it works, how it fits in with soft-switches, call managers and trace the establishment of a IP phone call step by step.

EC 211
WIRELESS COMMUNICATIONS (3 credits)
Studies the current state of advanced digital wireless technologies including cellular radio and technologies provided through the 802 Wireless Standards. Course includes an understanding of the principles of radio and multiple access technologies such as Time Division Multiple Access (TDMA) and Code Division Multiple Access (CDMA). Frequency reuse in cellular networks, cellular system architecture and operation, Third Generation (3G) and Fourth Generation (4G) cellular technologies, high-speed wireless data and Internet access, Broadband Wireless access, Fixed and Mobile Wireless Access (WiFi), WiMAX and WLANs. The students focus their studies on the Wireless Industry and how it pertains to telephony. Provides fundamental concepts from the basis of wireless communications. This course is designed to discuss and analyze the convergence of voice and data industries. Explain spectrum analysis – licensed and unlicensed use.

EC 238
CCNA II: ROUTING AND SWITCHING ESSENTIALS (3 credits)
Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

EC 246
CENTRAL OFFICE TRANSPORT (3 credits)
This course will focus on the Central Office environment and transport equipment of the telecommunications industry. Three basic areas of study will be covered, but not limited to, peripheral equipment, switching equipment and Internet protocols. Upon successful completion of this class, students will be able to work professionally, safely and efficiently in a central office environment. Students will comprehend the digital hierarchy scheme as it applies to the world of telephony. Learn the public switched telephone network and its signaling structure.

EC 249
ADVANCED OSP (3 credits)
 Installation and repair of outside plant technologies, copper, fiber, coax, able to analyze problems in outside plant systems and make effective repairs utilizing copper splices and fiber fusion splicers. Students understand Fiber To The Home (FTTH) concepts and terminology, comprehend terminology and acronyms. The locating of underground cable and fault location, reading staking sheets and telecommunication maps and diagrams. Identify and comprehend required steps in testing OSP. Discuss residential services, call features, customer service skills. Prerequisite: EC 100 and EC 105.

EC 251
TELECOM LAB III (4 credits)
 Hands-on lab supports for the following classes: EC-105, EC-210, and EC-211. This lab serves as a real world environment for the students and staff to apply the theories studied. Understand proper safety techniques, comprehend FCC and industry standards. Properly identify test equipment and tools. Properly install 66 and 110 blocks, design, install, test and troubleshoot structured cabling systems. Successfully conduct fiber and copper cable splicing. Prerequisite: EC 157.

EC 257
TELECOM LAB IV (5 credits)
 This lab serves as a real world environment for the students and staff to apply the theory studied in the previous classes. Exercise proper safety techniques. Properly identify and use test equipment in the telecom industry. Install, test and troubleshoot telecommunications systems to customer's premise and business locations. Construct a cabling system; utilize multiline services; exercise VoIP knowledge. Operate and maintain a central office with head-end video equipment. Students will install, operate and maintain the following systems: Genband C15 Softswitch; multiple fiber transport systems; Edge routers; Access Ethernet Access Switches; Voice over IP systems; Mitel 3300; Altigen; Avaya S8300 and Cisco UC520 systems.

EC 290
INTERNSHIP (6 credits)
 Supervised work experience in a position related to the telecommunications industry. Required for graduation.

ECM 101
ELECTRICAL FUNDAMENTALS (4 credits)
 AC/DC electricity and its characteristics. A study of the basic components used in various electrical systems.

ECM 103
DESIGNING ELECTRICAL SYSTEMS (3 credits)
 Basic wiring systems used in commercial and industrial fields as well as related code construction regulations. Calculation of motor branch circuits, feeder circuits and protective devices required by the NEC. Motor overload protection and wiring methods are discussed. Equipment design and the use of electrical equipment are explored. Prerequisites: ECM 101, ECM 151.

ECM 121
ELECTRICAL DRAWING (4 credits)
 Electrical blueprints. Current flow through circuits are studied using wiring diagrams and cable overlays. Work is conducted on wiring projects in student labs and project houses.

ECM 122
RESIDENTIAL BLUEPRINT AND CODE (3 credits)
 Home electrical systems using state and national wiring codes and regulations. Circuit-by-circuit review of unique electrical items and wiring methods installed in a home. Prerequisite: ECM 121.

ECM 149
BASIC CONDUIT BENDING (2 credits)
 Formulas used in conduit bending. Application of the formulas is used with electrical metallic tubing (EMT) hand benders. Then the different types of conduit bends are installed on practice surfaces.

ECM 151
BASIC ELECTRICAL LAB (5 credits)
 Hands-on study of AC/DC electricity behavior. Study of the NEC pertaining to general and residential wiring. Perform residential wiring tasks, including wiring of lab projects and complete wiring of project homes.

ECM 157
WIRING LAB (4 credits)
 Continuation of ECM 151. Basic wiring practices and methods used in residential settings are introduced. Install 100 and 200 amp breaker panels. Students work with a variety of cable wiring methods. Also studied are different electrical heating and basic control systems for motors. Safe electrical practices in the electrical industry are taught. Prerequisites: ECM 101, ECM 121, ECM 151.

ECM 202
MOTOR THEORY AND MAINTENANCE (2 credits)
 A practical hands-on course using ammeters, voltmeters, wattmeters and multimeters in testing and troubleshooting electric motors, components and wiring systems. A study of single and three-phase AC motors, their construction features and operating characteristics. This lecture/lab class emphasizes electric motor terminology, identification of motor types, enclosures, mounts, motor selection, connections, maintenance, testing and troubleshooting.

ECM 211
POWER DISTRIBUTION (1.5 credits)
 High voltage systems, transformers and their connections. The relationship between the primary and secondary sides of transformers are studied along with equipment selection and utilization. Generation, transportation and grounding of single-phase and three-phase power.

ECM 221
COMMERCIAL BLUEPRINT READING (2.5 credits)
 Continuation of ECM 122. Commercial and industrial installations are presented along with code-related regulations. Commercial service and feeder calculations. Commercial print reading and estimating.

ECM 231
ELECTRONIC CIRCUITS (2 credits)
 Electronic circuits and the operation of electronic components. Diodes, SCRs, triacs, JFETs, MOSFETs, UJT and industrial electronic devices are studied. Electronic controls are introduced.

ECM 235
STRUCTURED CABLING (4 credits)
 Identification of transmission mediums (UTP, STP, COAX, FIBER, etc.). Voice, data and video systems are reviewed. ANSI/EIA/TIA standards; proper terminating, splicing and testing of Category 5e and 6 copper cables; as well as terminating and splicing of fiber optic cables are covered.

ECM 244
VFD/MOTOR DRIVES (1 credit)
Operation of the solid state components found in electric motor drives. Students will learn the different types of electric motor drives, drive operating principles, and advantages to different types of motor drives to make the best selection. The course covers procedures for installation, basic and advanced programming, and start-up procedures for electric drives and motors. Students will learn to establish troubleshooting procedures to ensure minimal downtime.

ECM 251
COMMERCIAL AND INDUSTRIAL WIRING LAB (4 credits)
Continuation of ECM 149. Practical wiring applications of commercial and industrial are presented. All types of conduit bending are taught including hydraulic bending. An advanced level of industrial conduit bending is demonstrated.

ECM 252
INDUSTRIAL CONTROLS (3 credits)
Study of mechanical and electromagnetic starters, timers, switches and other control devices. Start/stop controls for motors and other industrial equipment. Learn control logic systems with ladder and wiring diagrams. Study connections and troubleshoot various circuits. Corequisite: ECM 255.

ECM 253
ADVANCED CONTROL SYSTEMS (2.5 credits)
Continuation of ECM 252. Applications of control devices are reviewed. Photoelectric controls, PLC logic modules, sequential motor starting, troubleshooting, reduced-voltage startup, acceleration and deceleration methods are studied. Prerequisites: ECM 252, ECM 255. Corequisite: ECM 257.

ECM 255
CONTROL LAB I (1.5 credits)
Hands-on use of apparatus studied in ECM 252 and ECM 202. Projects range from basic circuitry to advanced circuits utilizing motor starters, pilot devices and timing devices. Corequisite: ECM 252.

ECM 257
ADVANCED CONTROL LAB II (2 credits)
Continuation of ECM 255. Higher level experiments and practical applications of advanced industrial control circuitry are presented utilizing lab experiments and control equipment studied in ECM 253. Student tasks include designing, constructing, wiring and troubleshooting of the mechanical and/or PLC operated projects. Corequisite: ECM 253.

ECM 259
PROGRAMMABLE LOGIC CONTROLS (3 credits)
Programmable logic control systems for the control of electrical components and equipment. Projects using solid state devices in commercial and industrial applications are completed.

ECM 261
ADV. PROGRAMMABLE LOGIC CONTROLS (3.5 credits)
Continuation of ECM 259. More capabilities and applications of solid state control systems are integrated with text and lab projects. Logic networks solving typical industrial control problems are developed and programmed into a variety of controllers. Prerequisite: ECM 259.

ENGL 098
BASIC WRITING (2 credits)
Review in the basics of written communications. The emphasis is on grammar, sentence clarity, and paragraph structure. This class is offered for credit as a Pass/No Pass course. Placement test scores determine assignment.

ENGL 101
ENGLISH COMPOSITION (3 credits)
Intensive academic writing practice in communication. This course is designed to help the student produce clear, effective writing. Standard English grammar, usage, and punctuation in connection with writing structure, are emphasized. Expository essays and a research paper are included as course assignments. Prerequisite: ENGL 098 or qualifying placement score.

ENGL 110
WORKPLACE COMMUNICATIONS (3 credits)
Introduction to professional and technical writing. This course emphasizes correct mechanics, grammar, and sentence construction. Students will be assisted with developing strategies for writing collaboratively. Skills emphasis will be placed on a variety of documents, including definition, instruction, summary, job application portfolio, and a formal research report with an accompanying oral presentation. Prerequisite: ENGL 098 or qualifying placement score.

EUST 110
INTRODUCTION TO BASIC MOTOR CONTROLS (2 credits)
Presents basic AC and DC motor controls concepts and gives students an understanding of typical devices such as pushbuttons, selector switches, sensors, starters, contactors, overloads and relays.

EUST 114
SUBSTATION OPERATIONS LAB I (4 credits)
This lab will supplement the topics covered in EUST 120.

EUST 115
SUBSTATION OPERATIONS LAB II (4 credits)
This lab will supplement the topics covered in EUST 121.

EUST 120
SUBSTATION OPERATIONS I (3 credits)
Overview of substations and the different types. Students will learn what makes up the components of a substation such as the transformers and how they are cooled, different types of circuit breakers, methods of voltage control along with the function of smart grid metering and relaying.

EUST 121
SUBSTATION OPERATIONS II (3 credits)
A continuation of EUST 120. Students will perform hands-on testing of the components that make up a substation such as transformers, circuit breakers, regulators, capacitor banks along with replacement of smart meters and other smart grid equipment.

EUST 130
INTRODUCTION TO SMART GRID AND METERING (2 credits)
Smart grid is a type of electrical grid which attempts to predict and intelligently respond to the behavior and actions of all electric power users connected to it—suppliers, consumers and those that do both—in order to efficiently deliver reliable, economic and sustainable electricity services.

EUST 131
FIBER OPTICS FOR SUBSTATIONS (2 credits)
Identification of transmission mediums (UTP, STP, COAX, FIBER, etc.). ANSI/EIA/TIA standards; the proper terminate, splicing and testing of Category 5 and fiber optic cable are studied.

EUST 132
SCHEMATIC READING (2 credits)
Designed to prepare students with the ability to read and understand electrical diagrams, recognize equipment and verify the integrity of existing schematics. Participants will be introduced to electrical symbols, one-line and three-line electrical schematics and their content, including basic layout and legends. The course includes practical exercises in schematic reading, diagram verification and the steps required for creating and maintaining accurate one-line diagrams.

EUST 142
SUBSTATION COMMUNICATIONS TECHNOLOGY (2 credits)
Supervisory control and data acquisition (SCADA) systems have traditionally played a vital role by providing utilities with valuable knowledge and capabilities that are key to a primary business function. A quality SCADA solution is central to effective operation of a utility's most critical and costly distribution, transmission, and generation assets. Students will learn how the SCADA system integrates with substation equipment to provide reliable, safe delivery of electricity.

EUST 145
ALTERNATING CURRENT CIRCUITS (2 credits)
An introduction to the concepts of inductance, inductive reactance, capacitance, capacitive reactance, and reactive circuits; time constants; alternating current terms and principles; transformers; calculation of AC circuit values; identification of principles of motors and generators.

EUST 150
SUBSTATION SAFETY I (1 credit)
A health and safety curriculum for secondary electrical trades. The manual used is designed to engage students in recognizing, evaluating and controlling hazards associated with electrical work in a substation environment.

EUST 151
SUBSTATION SAFETY II (1 credit)
A continuation of EUST 150.

FBM 111
FUNDAMENTALS OF FARM BUSINESS MANAGEMENT (4 credits)
Overview of the Farm Business Management program. Students will be introduced to goal setting, self- and business assessment, record keeping and business projections to provide the fundamentals for personal and business management progress. Current issues affecting business management are an integral part of this course.

FBM 121
SYSTEM MGMT DATA AND FARM BUSINESS ANALYSIS (4 credits)
Continues to build on the fundamentals of farm business management. The student will complete a farm business financial and enterprise analysis. Sound financial record keeping is an integral component.

FBM 131
MANAGING AND MODIFYING FARM SYSTEM DATA (4 credits)
Helps the student refine their farm business data system and will assist them with applying year-end procedures for farm business analysis. Students will improve accuracy in the following: farm enterprise analysis; tax planning and filing; and cash and liabilities checks.

FBM 141
INTERPRETING AND EVALUATING FINANCIAL DATA (4 credits)
Expands on preparation and evaluation of the farm business analysis. Provides continued guidance and improvement of business record close-out procedures, tax implications of management decisions, and monitoring of farm business and family goals.

FBM 151
INTEGRATING INFO FOR FINANCIAL PLANNING (4 credits)
Provides a long-term strategy for the student to maintain and enhance the farm business and personal financial goals.

FBM 161
EXAM OF THE CONTEXT SYSTEM MANAGEMENT (4 credits)
Prepares students to develop improved farm system management procedures. Students will evaluate several years of an improved farm system analysis.

HAZ 100
HAZARDOUS MATERIALS SAFETY (0.5 credits)
This course covers OSHA General Industry Standards and other consensus and proprietary standards that relate to the use of hazardous materials. Course topics include flammable and combustible liquids, compressed gases, LP-gases, and cryogenic liquids. Related processes such as spraying and dipping, and use of electrical equipment in hazardous locations are also discussed. Upon course completion students will have the ability to assess compliance with OSHA hazardous materials standards, determine hazardous (classified) locations, and proper moving, storing, and handling of hazardous materials.

HST 101
INTRODUCTION TO HUMAN SERVICES (3 credits)
An interdisciplinary approach to the understanding of human services. This course introduces students to the skills necessary for entry level, professional work and allows students to explore themselves as potential human services professionals. The helping professions will be examined, including a brief history of social welfare and human service agencies.

HST 104
COMMUNITY RESOURCES (3 credits)
Community resources benefit individuals and families. Students will be exposed to a wide variety of community agencies, resources, and programs. This course will provide a broad overview of the resources and services available to a diverse population. Students examine agencies' professional practices, as well as how these individuals resources fit into the community as a whole.

HST 106
HUMAN SERVICES POPULATIONS (3 credits)
General information about human populations. Students will be introduced to a variety of people from diverse racial, ethnic, and cultural backgrounds, as well as information about the worldview or orientation that guides each culture. Discussions will involve the professional skills and awareness necessary for cultural sensitivity and bias along with age appropriate interactions.

HST 112
DISABILITIES (2 credits)
An introduction to working with people with disabilities. This course begins with brief overview of specific developmental disabilities. Included is general information regarding special education, residential services, vocational services, and other services for children and adults with disabilities. Students will explore personal beliefs and biases regarding people with disabilities.

HST 120
CHEMICAL AND SUBSTANCE ABUSE (3 credits)
A basic course in chemical, substance abuse and dependency. Students will be given brief overview of common chemical and substance abuses. The physiological, psychological, and social aspects of chemical and substance abuse will be examined. The role of the human services professional in assessing alcohol and drug abuse and dependency will be studied.

HST 122
ABUSE AND NEGLECT (3 credits)
This course discusses the different types of abuse and neglect involving children and adults and explores the definitions, indicators and causes of abuse, neglect and domestic violence. Students will learn about mandatory reporting laws and state welfare system. Investigation, assessment, and prevention efforts are highlighted.

HST 124
ASSESSMENT AND DOCUMENTATION (3 credits)
The exchange of information between clients and the human service technician is crucial to the helping relationship. This course will introduce students to basic interviewing and recordkeeping skills as practiced in human services and community agencies. Skillful interviewing strategies will be observed and practiced through simulated activities and role playing.

HST 128
SELF-CARE (2 credits)
This course covers topics concerning wellness, holistic health, mind-body connection, health and wellness models, mental wellness, positive self-concept, stress management, diet, nutrition, weight control, aerobic and strength building exercise, healthy lifestyle behaviors and applications to life. Professional boundaries and guidelines are discussed to promote healthy working relationships.

HST 130
BEHAVIORAL THEORY AND PRINCIPLES (2 credits)
Presents a behavior change approach in terms of basic principles, theory and treatment. This course will use science-based principles and procedures such as positive reinforcement, extinction, shaping, conditioning and modeling. Other topics covered will include behavioral techniques specific to Human Service Agencies in the Mitchell and surrounding areas.

HST 210
FAMILY DYNAMICS (3 credits)
This course evaluates the significance of family and its impact on the well-being of individuals and society. Students will explore how the family meets the needs of each member and the family as a whole including the impact of differences, perspectives, and the effects of crisis.

HST 220
WORKPLACE ETHICS (2 credits)
Introduces students to ethical issues they will encounter in the workplace. The course will cover professional behavior and values including the Code of Ethics of the National Association of Social Workers. The goal of this course will be to provide students with the tools and techniques for ethical decision making.

HST 222
MENTAL HEALTH AND WELLNESS (3 credits)
Study of human behavior with emphasis on emotional and mental abnormalities and modes of treatment. The student will identify common mental illnesses and maladaptive behavior; to assist in planning client care. Discuss trends in the management of the individual and medical and psychological treatment.

HST 226
GROUP PRACTICE (3 credits)
Provides an introduction to the techniques and applications of group work. Different types of groups, the phases of group development, and common group dynamics will be introduced. Students will gain understanding of concepts and skills when working with various groups.

HST 230
CAREER AND INTERNSHIP PREP (2 credits)
Prepares students to enter internship. Students will begin to make the transition from classroom learning to a professional setting. On-site visits to various community agencies will be made. Topics include reinforcement in: supervisory relationships, safety issues, computer applications, data collection, record keeping, professionalism, and confidentiality.

HST 240
CRISIS INTERVENTION (2 credits)
Theory of crisis intervention and stage of crisis. Presented will be human service worker's expected philosophy, knowledge, techniques and skills needed for working with people in crisis. Crisis intervention techniques will be examined, as well as models of conflict resolution.

HST 242
INTRODUCTION TO GERONTOLOGY (2 credits)
Focuses on human aging. Social, economic, and health issues related to the aging process will be discussed. Agencies, services, and programs that are available to the elderly will be explored.

HST 244
INTRODUCTION TO CORRECTIONS (2 credits)
Focuses on the corrections system in the United States. Students will learn about the correctional process of probation, institutionalization, and parole, along with human services careers within the corrections system. Services and programs available in the community and within institutions will be studied.

HST 246
INTRODUCTION TO YOUTH SERVICES (2 credits)
Focuses on individuals under the age of eighteen. Topics to be covered will include child development, parental influence, social, economic, and health issues related to youth. Students will learn about agencies, services, and programs available to youth and parents/guardians.

HST 250
SOCIAL WELFARE (2 credits)
This course exposes students to the judicial system. Human Service Technicians are mandatory reporters and, as such, must have basic understanding of the legal system and their role in it. Topics include terminology, record keeping, testifying, and court preparation.

HST 290
INTERNSHIP (6 credits)
Supervised work experience with an appropriate agency. Students will fine-tune their professional skill development through work with diverse populations in an approved setting. Students will have an opportunity to request internship sites based on their interest, strengths and employment goals.

HV 101
ELECTRICAL FUNDAMENTALS (3 credits)
Basics of electricity. Direct current (DC), alternating current (AC), electrical laws and symbols, circuit fundamentals, and the use of test equipment is taught. Electrical fundamentals related to heating, ventilation, air conditioning and refrigeration systems is emphasized. Projects are assigned using computer simulation programs and laboratory trainers.

HV 111
HEATING FUNDAMENTALS (3 credits)
Basic theories of heating. Typical heating equipment and appliances are reviewed. Maintenance procedures of gas, fuel oil and electric furnaces are studied. Projects include using computer simulation programs and lab trainers.

HV 121
A/C AND REFRIGERATION FUNDAMENTALS (2 credits)
Introduces the basic theories of air conditioning and refrigeration. The proper operation and function of components in a cooling system are identified. Projects use computer simulation programs and lab trainers.

HV 122
SHEET METAL TECHNOLOGY AND LAB (3 credits)
Basic sheet metal and fittings. Use of sheet metal hand tools and equipment is taught. Procedures for duct layout and sheet metal terminology is reviewed. Use, maintenance and operating adjustments of sheet metal shop equipment. Pattern layout, fabrication, use of hand tools and assembly procedures are covered.

HV 132
HEATING AND REFRIGERATION THEORY (4 credits)
Continuation of HV 121. More detailed information about heating and refrigeration cycles is taught. Also covered are controls, new refrigerants, refrigerant recovery and recycling. A refrigerant certification test is administered.

HV 142
HV CONTROLS AND HEAT PUMPS (3 credits)
Heat pump application and theory. Controls covered include low voltage, temperature, low/high and oil.

HV 151
A/C/HEATING/REFRIGERATION LAB I (4 credits)
Introduction to lab trainers and equipment including heating and cooling equipment used in residential buildings. Projects use computer simulation programs.

HV 152
A/C/HEATING/REFRIGERATION LAB II (4 credits)
Maintenance, troubleshooting and installation of gas, fuel oil and electric furnaces, air conditioning and refrigeration equipment. Projects use computer simulation programs and lab trainers.

HV 160
PLANNING AND ESTIMATING (3 credits)
Calculations of heat loss and heat gain on residential/commercial buildings and on refrigeration equipment. Computer software programs are used to determine heat loss and gain. Develop blueprints, duct work layout and estimating.

HV 202
COMMERCIAL REFRIGERATION (4 credits)
Commercial refrigeration systems. Low, medium and high temperature refrigeration equipment and computerized rack systems are studied. The reading and drawing of commercial electrical schematics is introduced.

HV 231
HEAT PUMPS/SOLAR HEATING THEORY (3 credits)
Application and design of heat pumps. The efficiency of heat pumps is compared to alternative systems. Maintenance, installation and troubleshooting procedures are taught. Integration of solar and photovoltaic technology is covered.

HV 232
COMMERCIAL AIR CONDITIONING (3 credits)
Operation of large, commercial air conditioning systems. Included are controls, pressure devices and safety regulations.

HV 244
WIRING SCHEMATICS (2 credits)
HVAC/R wiring diagram symbols. Students will be able to identify both parallel and series circuits; draw pictorial and ladder diagrams; identify abbreviations for common HVAC/R components; and be able to read the legend of a wiring schematic.

HV 251
A/C/HEATING/REFRIGERATION LAB III (4 credits)
Maintenance, installation and troubleshooting of air conditioning, heating and refrigeration systems.

HV 252
A/C/HEATING/REFRIGERATION LAB IV (4 credits)
Continuation of HV 251. Maintenance, installation and troubleshooting of heat pump, air conditioning, heating and refrigeration systems.

HV 259
DDC TEMPERATURE CONTROL (3 credits)
Application and Design of basic DDC Control Systems. Direct Digital Controls and Building Automation Systems will be introduced. Installation, programming and check out of a basic controls system will be studied.

HV 290
INTERNSHIP (6 credits)
Work in a position related to the heating and cooling industry. Prerequisite: Successful completion with a GPA of 2.0 or higher in all previous required technical courses.

IST 105
SQL DATABASE MANAGEMENT (2 credits)
Provides a thorough introduction to database administration principles and practices necessary to perform Microsoft SQL Server administration in an enterprise environment. In addition to explaining concepts, the course uses a variety of hands-on assignments and exercises to reinforce the material in each chapter.

IST 112
MS SERVER ADMINISTRATION (5 credits)
Equips the students with the skills necessary to manage a Windows Server system with a focus on installation and configuration. Through hands-on labs, extensive coverage begins with an introduction to Windows Server and continues with coverage of server management, configuration of storage, file and printer services, Active Directory, account management, Group Policy, TCP/IP, DNS, DHCP, and Hyper-V virtualization. Prerequisites: IST 130 or CSS 206.

IST 120
A+ HARDWARE/OPERATING SYSTEMS (5 credits)
Presents a comprehensive overview of computer system fundamentals and an introduction to operating systems. Students working through hands-on activities and labs gain skills in assembling components, install, configure and maintain devices, PCs and operating system software, understand the basics of networking and security, laptops, printers, and properly diagnose, and resolve common hardware and software issues while applying troubleshooting skills. Students also gain understanding of appropriate customer support; understand the basics of virtualization, desktop imaging, and deployment. CompTIA's A+ Certification is a widely accepted IT industry standard certification for PC technology for an entry-level IT professional. This course prepares students for CompTIA's A+ 220-801 and 220-802 exams.

IST 125
A+ CERTIFICATION PREP (1 credit)
A further in-depth study in preparation for becoming CompTIA A+ certified. Students will take the two required exams at the end of the semester.

IST 140
CISCO CCNA I (5 credits)
The CCNA Routing and Switching introductory courses introduce 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.

IST 141
CISCO CCNA II (5 credits)
This course describes the architecture, components and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs and inter-VLAN routing in both IPv4 and IPv6 networks. Prerequisite: IST140.

IST 156
INFORMATION SECURITY I (2 credits)
The basics of security are covered. The course introduces students to computer vulnerabilities and threats and steps that can be taken to safeguard computers and networks. This course will expose the student to security planning, security technology, security organization and the legal and ethical issues associated with computer and network security.

IST 159
LINUX SYSTEMS (2 credits)
Provides a basic knowledge required to competently use a desktop or mobile device using a LINUX Operating System. Through extensive hands-on labs students will understand the place of LINUX and Open Source in the context of the broader IT industry. Prerequisite: Basic keyboarding and computer skills expected.

IST 207
DATACENTER LOGISTICS (2 credits)
IT equipment rooms have become the core for any IT and telecommunications infrastructure. They have grown exponentially as IT has converged voice, video and data into one physical plant. With that growth has been the demand for IT personnel to know how to design, manage and maintain such central core business assets. Virtual technology in a cloud environment is used in hands-on labs. Datacenter logistics will teach students to evaluate best practices today and into the future in the virtual datacenter.

IST 208
COMPUTER FORENSICS (3 credits)
Introduces students to the techniques and tools of computer forensics investigations. Students will research step-by-step procedures in how to use the most popular forensic tools. Topics include coverage of computers, cell phones and flash drives. Many hands-on activities are included, which allow students to practice skills as they are learned.

IST 243
CISCO CCNA III (2 credits)
This course describes the architecture, components and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Prerequisite: IST140.

IST 244
CISCO CCNA IV (2 credits)
This course discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Prerequisite: IST140, IST141, IST243.

IST 256
INFORMATION SECURITY II (3 credits)
This course will focus on the principles, theory and terminology of Information Security. Students will study the principles of vulnerabilities, risk management, countermeasures, operations security and disaster planning. The course will also introduce common threats, tools and practices used by hackers to attack an organization's information infrastructure. Special emphasis is placed on the use and understanding of scanning and exploit tools. Students will participate in exercises designed to demonstrate the development of a business continuity and disaster recovery plan. Prerequisite: IST 222.

IST 259
LINUX SERVER (2 credits)
Sourced from an ever-growing demand for a LINUX-trained workforce to manage the cloud server, this class uses the LINUX Professional Institute certification exams 101 and 102 (LPIC-1) as a guide. This course builds from a knowledge base upon topics learned in IST 159 LINUX Systems. In-depth labs are used throughout the class to enhance student success in mastering topics such as system architecture, installation, package management, command structure, file systems, and hardware device management. Student activities include obtaining a domain name, managing a departmental website, mail server, and configuring a firewall.

IST 264
MS ACTIVE DIRECTORY (4 credits)
Gain experience in understanding, designing and working with Active Directory for Microsoft networks. Through hands-on exercises students learn how to plan for deployment, develop security strategies, work with group policies and user profiles, configure access control and resource sharing, monitor performance and administer Active Directory. Virtualization and scripting using PowerShell is utilized. Prerequisite: IST 112.

IST 265
NETWORK MONITORING AND MANAGEMENT (2 credits)
Exclusive hands-on exploration of monitoring and management tools. Students will apply skills from previous networking and server courses to manage and monitor a local area network as well as the virtual components. Prerequisites: IST 112, IST 140, IST 141.

IST 266
INFORMATION SECURITY III (3 credits)
This course is a continuation of the increasing awareness of the information security field. The state-of-the-art virtual lab will be used to focus on offensive hacking tools used by the "bad guys." Students will spend time working with firewalls with a virtual network for perimeter defense. Videos, chats, and the "dark internet" will all be used for research during this class. The main focus will be a heightened security awareness among all students completing this class to take into their future employment.

IST 268
MS EXCHANGE SERVER (3 credits)
Students in this course install, configure, administer and support the Exchange Server. The course begins by examining basic email and Active Directory concepts and administrative procedures. Subsequent chapters are devoted to the installation and management of Exchange Server, including the configuration of server roles, recipient objects, clusters, mobile technologies and security. In addition, this course examines the procedures used to backup, monitor and troubleshoot Exchange Server. Prerequisite: IST 264.

IST 270
TECHNICAL LAB (2 credits)
A real-world environment for the students and staff to apply the theory studied in previous classes. Students will engage in activities and projects designed to prepare and provide them with the knowledge, skills, and attitudes required to become technical professionals in a data center environment.

IST 286
INTERNSHIP (6 credits)
Supervised internship performed off-campus in a computer network or systems support setting.

LPN 100 (0.5 credits)
TEST TAKING STRATEGIES
Prepares nursing students to become more effective in test-taking with topics of time management, critical thinking, stress and anxiety management, and test question and answer evaluation methods. This course will help students understand the NCLEX-PN exam test plan and long term strategies to prepare students for the exam. Co-Requisites: LPN 101, LPN 102, LPN 103, MA 103.

LPN 101 (4 credits)
FUNDAMENTALS OF NURSING
Focuses on the foundational development of the role of the Practical Nurse. Legal and ethical standards, trends in nursing, and scope of practice of practical nursing will be explored. This course also introduces the student to the nursing processes as a tool to guide clinical judgement. Additional concepts within the course include communication, documentation, caring, confidentiality, infection control, safety, and information security. Co-Requisites: LPN 100, LPN 102, LPN 103, MA 103.

LPN 102 (2 credits)
FUNDAMENTALS OF NURSING CLINICAL
The clinical component of LPN 101. This course is a continuation of fundamentals course with application of theoretical nursing content into the clinical, lab, and simulation setting. Students will gain experience mastering basic nursing skills and foundational clinical decision making. Co-Requisites: LPN 100, LPN 101, LPN 103, MA 103.

LPN 103 (3 credits)
PHARMACOLOGY
Designed to provide students with opportunities to develop pharmacological competencies necessary to meet the needs of individuals throughout the lifespan in a safe, legal, and ethical manner. This course contains a basic pharmacological foundation of knowledge of drug classifications and medication prototypes, therapeutic actions, side-effects, and nursing implications. This course introduces students to basic principles of pharmacology, dosage calculations, and the knowledge necessary to safely administer medications. Co-Requisites: LPN 100, LPN 101, LPN 102, MA 103.

LPN 105 (4 credits)
ADULT HEALTH NURSING I
Builds upon the fundamentals nursing course. This course is designed to acquaint the learner with classification of medical/surgical diseases using the Body System approach as the framework. The significance of each symptom and the nurse's responsibility for patient care will be stressed. Emphasis is placed on physiological disorders that require management in an acute and/or long term care facility. Nutrition, pharmacology, communication, and cultural concepts are integrated throughout this course. Pre-Requisites: LPN 100, LPN 101, LPN 102, LPN 103, MA 103. Co-Requisites: LPN 106, LPN 107, LPN 108.

LPN 106 (3 credits)
ADULT HEALTH NURSING I CLINICAL
The clinical component of LPN 105. Clinical experiences provide the student an opportunity to apply theoretical concepts and implement safe patient care in lab, simulation, and acute and long term care settings. Medication administration concepts and skills, patient care management principles and professional/therapeutic communication will be developed throughout the clinical course. Pre-Requisites: LPN 100, LPN 101, LPN 102, LPN 103, MA 103. Co-Requisites: LPN 105, LPN 107, LPN 108.

LPN 107 (3 credits)
MATERNAL AND CHILD NURSING
Provides an integrative, family-centered approach to maternity and pediatric nursing, highlighting the ways in which infants and children differ from adults. Emphasis is placed on normal and abnormal pregnancies, family dynamics, care of the newborn, growth and development and common pediatric disorders. The impact of psychosocial and cultural values and practices of the childbearing family unit are also explored. The nursing process is used in identifying and meeting the needs of the childbearing family to facilitate optimal functioning. Nutrition, pharmacology, and communication concepts are integrated throughout this course. Pre-Requisites: LPN 100, LPN 101, LPN 102, LPN 103, MA 103. Co-Requisites: LPN 105, LPN 106, LPN 108.

LPN 108 (2 credits)
MATERNAL AND CHILD NURSING CLINICAL
The clinical component of LPN 107. Clinical experiences provide the student an opportunity to apply theoretical concepts and to provide safe patient care to childbearing family unit and children in the lab, simulation, and selected clinical settings. Pre-Requisites: LPN 100, LPN 101, LPN 102, LPN 103, MA 103. Co-Requisites: LPN 105, LPN 106, LPN 107.

LPN 110 (5 credits)
ADULT HEALTH NURSING II
Builds upon Adult Health Nursing I and continues to acquaint the learner with classification of medical/surgical diseases using the Body System approach as the framework. The knowledge regarding disease processes and application of the nursing process is also emphasized. This course is designed to assist the student in developing concepts of mental health and his/her role in the mental health effort. An awareness of mental illness, its treatment, and relationship to all areas of nursing will be included. Nutrition, pharmacology, culture, critical thinking skills, prioritizing, ethical and legal issues, documentation, and working with other members of the healthcare team are concepts that are interwoven throughout this course. Pre-Requisites: LPN 105, LPN 106, LPN 107, LPN 108. Co-Requisites: LPN 111, LPN 112.

LPN 111 (3 credits)

GERIATRIC NURSING

An overview of the normal physical, psychological and cultural aspects of the aging process. It addresses common disease processes of aging and exploration of attitudes toward care of the older adult as guided by the National League for Nursing Advancing Care Excellence for Seniors (ACES). Literature review and research activity allow the student to relate common issues and needs of the older adult. Also covered are preventative care and restorative measures for the older adult. An emphasis is given on adaptations in the provision of nursing care to the older individual. Nutrition, pharmacology, communication, and cultural concepts are integrated throughout this course. Pre-Requisites: LPN 105, LPN 106, LPN 107, LPN 108. Co-Requisites: LPN 110, LPN 112.

LPN 112 (3 credits)

ADULT HEALTH II AND GERIATRIC NURSING CLINICAL

The clinical component of LPN 110 and LPN 111. Clinical experiences provide the student an opportunity to apply theoretical concepts and to provide safe patient care to complex patient situations with an emphasis on the adult and geriatric population with multiple co-morbidities in the lab, simulation, and selected clinical settings. Care of the patient with the student having a more autonomous role will be emphasized. Pre-Requisites: LPN 105, LPN 106, LPN 107, LPN 108. Co-Requisites: LPN 110, LPN 111.

LPN 150 (3 credits)

LPN CAPSTONE PRACTICUM

Designed to provide students with the opportunity to integrate clinical and theoretical learning from previous nursing courses through a role-transition clinical experience. The purpose is for students to function in one of the professional nursing roles and further the transition from student nurse to professional practical nurse. Pre-Requisites: LPN 110, LPN 111, LPN 112.

MA 100

BASIC LIFE SUPPORT FOR HEALTH CARE (0.5 credit)

This course meets CDC, OSHA and NFPA guidelines for basic life support. It focuses on immediate life-threatening situations, demonstrates quick, effective responses and presents perspectives on how frequently these situations occur. It is ideal for professionals such as firefighters, police, paramedics, lifeguards, athletic trainers, medical assistants and other medical professionals. Topics covered include the professional rescuer's role in emergencies; victim's condition assessment; basic life support; rescue breathing; cardiac emergencies; airway obstructions; AED use; and resuscitation in special situations. This class is offered for credit as a Pass/No Pass course.

MA 101

MEDICAL TERMINOLOGY (3 credits)

Vocabulary and terms used in the medical professions. Meanings of root words, prefixes and suffixes are studied. Proficiency is gained in analyzing medical words and in understanding how the word elements relate and apply to medicine. (A grade of "C" or higher required to continue in medical programs.)

MA 103

ANATOMY/PHYSIOLOGY (4 credits)

Basic anatomy and physiology of the human body. Systems studied include integumentary, musculo-skeletal, nervous, circulatory, lymphatic, respiratory, urinary, digestive, endocrine and reproductive. (A grade of "C" or higher required to continue in medical programs.)

MA 106

MEDICAL LABORATORY FUNDAMENTALS (4 credits)

Introduction to medical laboratory work with specific reference to the role, ethics, conduct, certification, education, employment and fundamental knowledge and skills related to clinical laboratory personnel. Basic mathematics review and lab related math such as the metric system, temperature conversions, concentration units, including terms used in quality control are covered. Included in this course is laboratory safety to include physical, chemical and biological hazards, barriers and isolation techniques. Students are instructed in the collection and preparation of specimens to include venipunctures and capillary sticks, reporting of laboratory results and quality assurance methods.

MA 111

MEDICAL OFFICE PROCEDURES (3 credits)

Material, situations and work in a medical front office. Examples, explanations and illustrations from the medical office are utilized. The perspective of the medical assistant is emphasized. Communication skills, recording patient histories, office accounting, secretarial, reception and other clerical skills are stressed.

MA 112

LABORATORY PROCEDURES I (4 credits)

An emphasis is placed on the laboratory procedures that Medical Assistants perform. These include work with hematology (hemoglobin, hematocrit, white and red cell counts, indices, platelet count, erythrocyte sedimentation rate) and urinalysis/body fluids. Modern automated instrumentation is utilized. Prerequisite: "C" grade or higher in MA 106.

MA 113

LABORATORY PROCEDURES II (4 credits)

An emphasis on laboratory procedures includes chemistry, basic immunology and serology and microbiology. Automated instrumentation and POL point-of-care equipment are used.

MA 123

PATHOPHYSIOLOGY (3 credits)

Pathology of diseases. Special emphasis is placed on the etiology, signs, symptoms, diagnoses and treatment options for diseases and conditions of the human body. Prerequisite: MA 101, MA 103.

MA 162

MEDICAL LAW AND ETHICS (2 credits)

Ethical principles and legal regulations governing a medical practice.

MA 210

PHARMACOLOGY AND ADMINISTRATION OF MEDICINES (3 credits)

Identification of the classification and uses of medicines, vaccines, etc. Included are the correct procedures for administration of these materials. Prerequisites: MA 101, MA 103, MA 123.

MA 211

ADVANCED MEDICAL OFFICE PROCEDURES (3 credits)

Enhanced competencies and EHR skills. Students will apply the techniques within the SIM lab. Prerequisite: MA 111.

MA 220

EXAMINATION ROOM TECHNIQUES I (4 credits)

Clinical office competencies and skills required of the medical assistant. Course work includes aseptic technology, assessment and procedures, preparation and administration of medications, vital signs assessment, recording and assisting with physical examinations, performance of disinfection and sterilization and charting techniques. Prerequisite: MA 101, MA 103, MA 123.

MA 221
EXAMINATION ROOM TECHNIQUES II (3 credits)
A continuation of clinical procedures performed in a medical office. Course work includes assisting with specific physical exams, instrument recognition, ear and eye procedures, catheterization, dressing applications, preparation of surgical trays and patient education. Prerequisite: MA 220.

MA 240
CARDIAC MONITORING AND DX PROCEDURES (2 credits)
General knowledge of electrocardiography. Special emphasis is placed on equipment used, procedures performed and education of patients. Prerequisite: MA 101, MA 103, MA 123.

MA 250
CLINICAL EXTERNSHIP (6 credits)
Experience in medical facilities and organizations. Work is performed under the direct supervision of licensed medical personnel. Prerequisite: Successful completion of 67.5 credits prior to start of externship.

MAP 101
INTRODUCTION TO GIS (4 credits)
This course introduces tools and techniques of data creation, data integration, mapping, and spatial analysis in geographic information systems (GIS). Students will create geodatabases for field GPS data collection. The course will incorporate hands-on use of ESRI Arc Map.

MAP 105
GPS DATA COLLECTION AND MANAGEMENT (4 credits)
Students will be introduced to basic GPS principles including GPS corrections, constellations, navigation and primary industry uses. Students will have hands-on experience with different data collection techniques using Trimble GPS devices. Workflow procedures and geodatabase implementation will be practiced.

MAP 110
CAD I (2 credits)
This course introduces computer-aided drafting software for specific technologies. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings.

MAP 120
CAD II (2 credits)
A continuation of CAD I moving onto advanced techniques. Advanced AutoCAD concepts such as assigning data to blocks and importing and exporting of AutoCAD files from and to other software are all covered. The majority of this class is in 2D drawing however 3D isometric views are covered.

MAP 121
CLOUD-BASED GPS/GIS APPLICATIONS (2 credits)
Students will work with mobile GPS/GIS products including but not limited to ESRI, Trimble, and AgTerra products. The course will focus on collecting data and uploading to cloud-based services. It will also cover the online cloud-based GIS services available to analyze collected data.

MAP 125
ADVANCED GIS PROBLEMS AND ANALYSIS (4 credits)
This course will be a continuation of Intro to GIS. Students will also be involved in GIS modeling, problem solving, planning, and geo-referencing CAD plans for utility and construction purposes.

MAP 128
REMOTE SENSING (3 credits)
The course will focus on the implementation and interpretation of remotely collected data. Students will have access to MTI's Trimble UX-5 for top of the line drone imagery. They will also have access to satellite and other aerial images to analyze, create data, and make decisions.

MATH 091
BASIC ALGEBRA (2 credits)
Preparatory course for Intermediate Algebra and Technical Math. Students will learn about solving equations, exponents and polynomials, graphs and systems of equations, factoring and quadratic equations. This class is offered for credit as a Pass/No Pass course. Test scores determine placement.

MATH 101
INTERMEDIATE ALGEBRA (3 credits)
Preparatory course for College Algebra. This course introduces the basic properties of real numbers, polynomials and equations. Assignments will include factoring polynomials, linear and quadratic equations, exponents and radicals, functions, logarithms and rational expressions. Prerequisite: MATH 091 or qualifying test score.

MATH 102
COLLEGE ALGEBRA (3 credits)
Equations and inequalities; polynomial functions and graphs, exponents, radicals, binomial theorem, zeroes of polynomials; systems of equations; exponential, logarithmic and inverse functions, applications and graphs. Other topics selected from sequences, series and complex numbers.

MATH 104
TECHNICAL MATH (3 credits)
Designed for the student with a strong algebraic foundation. This course includes the study of geometry, trigonometry and statistics. Extensive use of problem-solving and critical thinking skills are required. Prerequisite: MATH 091 or qualifying test score.

MATH 130
BUSINESS MATH (3 credits)
Covers basic mathematical calculations commonly used in business settings. Course covers computing fractions and decimals, the order of operations for combined computations and solving equations and word problems. Also provides instruction on the use of a calculator for business applications.

MEN 290
MENTORSHIP AND COACHING FOR MENTORS I (2 credits)
Organizations increasingly recognize the need for professionals who possess the skills to function in the global economy and are ready to take on leadership and supervisory roles. Optimizing the leadership pipeline and closing the leadership gap depends on the organization's ability to choose and prepare the best leaders for tomorrow. This building of character and competence of developing leaders comes with a partnership of the intra-company mentorship. We focus on the relationship building as well as the mind-set, skill-set, tool-set, and heart-set of future leaders to empower them to confront the leadership challenges of the 21st century. A focus is on developing leaders in: talent, engagement, loyalty, preparedness, diversity, learning and growth. Creating a Mentorship Plan and Personal Development Plan is held throughout the course and in constant review/change.

MEN 291
MENTORSHIP AND COACHING FOR MENTORS II (2 credits)
 The mentoring partnership matters. Coaching matters. Understanding and strengthening mentoring-coaching skills facilitates the professional growth of self, team and the organization. Techniques utilizing building team performance is centered around interpersonal needs and behaviors. A variety of effective communication skill-sets are required and developed with courage and candor. Setting goals, realistic goals matters. As humans, we must hold ourselves and help others hold themselves accountable to realistic goals, prioritize tasks, and track milestones to improve performance and morale.

ML 104
MEDICAL LABORATORY FUNDAMENTALS (3 credits)
 Introduction to medical laboratory work with specific reference to the role, ethics, conduct, certification, education, employment and fundamental knowledge and skills related to medical laboratory personnel. Basic mathematics review and lab related math such as the metric system, temperature conversions, concentration units, dilutions, ratios and statistics used in quality control are covered. Included in this course is laboratory safety to include physical, chemical and biological hazards, laboratory safety, barriers and isolation techniques. Students are instructed in the collection and preparation of specimens to include venipunctures and capillary sticks, reporting of laboratory results and quality assurance methods.

ML 105
INSTRUMENTATION (2 credits)
 Basic design of advanced laboratory automation equipment. Course materials include laboratory glassware, microscopes, centrifuges, balances and scales, pipetting, spectrophotometry, turbidometry, nephelometry, ion selective electrodes, electrophoresis, chromatography and advanced quality assurance.

ML 111
HEMOSTASIS (2 credits)
 Theory and practical application of the coagulation pathway to include factors involved in coagulation tests: capillary fragility, prothrombin times, partial thromboplastin times and fibrinogen assays. Prerequisite: Grade of C or higher in ML 104 and ML 105.

ML 112
HEMATOLOGY (6 credits)
 Anatomy, physiology and related pathology of the circulatory system with specific reference to the formation, function and identification of blood cells. Major emphasis is on the related theory and performance of hematological procedures such as sample identification, collection and preparation; automated leukocyte and erythrocyte counts; hemoglobin and hematocrit measurements; WBC differential; leukocyte and erythrocyte morphology; RBC indices; erythrocyte sedimentation rate; platelet count; reticulocyte count; and eosinophil count. Automated hematological equipment is included. Specific methodologies in common use in medical laboratories and quality control standards are followed. Prerequisite: Grade of C or higher in ML 104 and ML 105.

ML 121
URINALYSIS/BODY FLUIDS (3 credits)
 Anatomy, physiology and related to pathology of the urinary system. Major emphasis is on the related theory and performance of physical, chemical and microscopic analysis of urine as well as collection, preservation and proper reporting of analysis. Certain renal function tests and occult blood are covered. Emphasis is placed on anatomy, physiology and related pathology of body fluids to include feces, semen, seminal fluid, synovial fluid, serous fluid, spinal fluid and the collection, preparation, preservation and analysis of those fluids. An introduction to cell counts of other body fluids is covered. Prerequisite: Grade of C or higher in ML 104 and ML 105.

ML 144
INTRODUCTION TO LABORATORY CHEMISTRY (3 credits)
 General and biological chemistry with applications specific to the medical laboratory. The student will become familiar with chemical terminology, the atomic structure, ionic and molecular compounds, organic chemistry and acid and base balance. The biochemistry of carbohydrates, lipids, proteins, enzymes and hormones are presented and their relationship to the medical laboratory is studied. Prerequisite: A grade of C or higher in this course is required before enrolling in ML 230.

ML 171
IMMUNOLOGY/SEROLOGY (3 credits)
 Basic genetics, immunology and serology. The student will acquire an understanding of the immune system including antigen/antibody reactions, origin, stimulation, body response and rejection. A study of the immunoglobulins, complement and classifications of immunity, precipitation and agglutination reactions is included. Serological tests include the related theory and performance of procedures to include hepatitis, rubella, Epstein-Barr virus, AIDS, CRP, RA, FANA, cold agglutinins, pregnancy, streptococcal diseases and autoimmune diseases. Immunoassay principles and practical applications are covered. Prerequisite: Grade of C or higher in ML 104 and ML 105.

ML 214
PRACTICAL CLINICAL HEMATOLOGY (4 credits)
 Hematology which includes hemoglobin, hematocrit, leukocyte count; WBC differential; sed rate; erythrocyte count; platelet count; reticulocyte count; eosinophil count; clotting time; prothrombin time; activated partial thromboplastin time; preparation of bone marrow smears. Experience is gained through obtaining blood samples to include venipuncture, capillary puncture and arterial blood gases. Additional hematological procedures may be performed at the option of the affiliated laboratory. This course is included in the clinical practicum semester.

ML 224
PRACTICAL CLINICAL URINALYSIS/BODY FLUIDS (3 credits)
 Urinalysis which includes physical and chemical tests; microscopic identification of formed elements; collection and preparation of 24-hour samples for quantitative tests; pregnancy tests; renal function tests of urine, feces and spinal fluid and other body fluids. Additional urinalysis procedures may be performed at the option of the affiliated laboratory. This course is included in the clinical practicum semester.

ML 230
CLINICAL CHEMISTRY (4 credits)
 Basic clinical chemistry and diagnostic analysis. Included are analytical chemical procedures such as identification, collection, handling, standardization and quality control, carbohydrate tests, renal function tests, proteins including electrophoresis, electrolytes, enzymes, liver function tests, therapeutic drug monitoring, endocrinology and toxicology. Automated instrumentation is emphasized. Prerequisite: a grade of C or higher is required in ML 104, ML 105 and ML 141.

ML 234
PRACTICAL CLINICAL CHEMISTRY/IMMUNOASSAY (6 credits)
 Clinical chemistry which includes specimen procurement, quantitative measurement and clinical significance of glucose, urea, nitrogen, proteins, triglycerides, cardiac markers, toxicology, therapeutic drug monitoring, bilirubin, cholesterol, electrolytes, enzymes, creatinine, uric acid, calcium, phosphorus, thyroid function test, iron, TIBC, pH and blood gases. Additional chemical procedures may be performed at the option of the affiliated laboratory. This course is included in the clinical practicum semester.

ML 240
MICROBIOLOGY (6 credits)
Classification, identification and pathology of disease-causing organisms such as bacteria, fungus, yeasts, viruses, rickettsiae and parasites. Major emphasis is on the related theory and performance of microbiological procedures such as sterilization, collection and preparation of specimens, culturing methods, media preparation, staining techniques, antibiotic sensitivity testing and identification of commonly cultured bacteria. Prerequisite: a grade of C or higher is required in ML 104 and ML 105.

ML 244
PRACTICAL CLINICAL MICROBIOLOGY/SEROLOGY (5 credits)
Microbiology includes collecting, setting up, plating, incubating, transporting and transferring microbiological cultures; identification of organisms involving common techniques such as gram stain, special stains, biochemical tests, coagulase and catalase tests and antibiotic susceptibility tests. Serological procedures might include RPR, streptococcus antigens and antibodies, infectious mono tests, RA, pregnancy, HIV, hepatitis, FANA, RSO, influenza A and B and C-RP tests. Preparation of samples for parasitology, mycology and virology study are included at the option of the affiliated laboratory. This course is included in the clinical practicum semester.

ML 272
IMMUNOHEMATOLOGY/BLOOD BANKING (3 credits)
Basic immunohematological aspects of blood factors and their relationship to blood transfusion and disease states. Topics include the history, identification, inheritance of blood factors and antigen-antibody relationships involving detection of blood factors. Major emphasis is on the related theory and performance of immunohematological procedures such as ABO grouping, Rh typing, identification of blood factors, direct coombs, antibody screening and identification, compatibility testing, transfusion of blood and blood components, selection, collection, storage of donor blood and quality assurance. Prerequisite: A grade of C or higher in ML 171.

ML 274
PRACTICAL CLINICAL IMMUNOHEMATOLOGY (4 credits)
Immunohematology: which includes blood banking, ABO grouping, Rh typing, direct and indirect coombs testing, antibody screening and compatibility testing. Selection of blood donors, collection of blood for transfusion, storage of blood and blood components and quality control are included. Additional blood banking procedures may be included at the option of the affiliated medical laboratory. This course is included in the clinical practicum semester.

MOP 130
COMPUTERS IN THE MEDICAL OFFICE (3 credits)
Develops the ability to operate and maintain the computer efficiently. Using specialized programs, students will learn about billing office processes, handling patient records and transactions (new patients, immunizations records, insurance information, etc.), processing payments, correspondence and other computer-related tasks.

MOP 160
CPT/ICD-10/CM CODING (3 credits)
A formal system for converting descriptions of diseases, injuries and health care procedures into numeric and alphanumeric designations. Students will learn to place code numbers and correlate to procedures performed to test or correct diagnoses. Prerequisites: MA 101, MA 103.

MOP 206
TRANSCRIPTION I (4 credits)
Transcription of medical terms and cases. Reports are generated including the first stage of treatment through discharge. Prerequisites: MA 101, MA 103, MA 123.

MOP 210
MEDICAL INSURANCE AND BILLING (3 credits)
An overview of processing medical insurance claims. Special topics may include Medicare, various types of insurances, refilling, resubmitting, etc. Coding skills attained in MOP 160 will be used. Prerequisite: MOP 160.

MOP 212
ELECTRONIC MEDICAL RECORDS (3 credits)
Documentation of all procedures performed on patients. The new EMR technology replaces the old patient "chart." Students will become familiar with software and its capabilities including communication with pharmacies, physicians, hospitals, other care providers and patients. Prerequisites: MA 101, MA 103.

MOP 230
MEDICAL OFFICE ADMINISTRATION (3 credits)
Explanations and illustrations of procedures, situations and tasks in a typical medical office. Units on patient health information, records management, telephone skills, communication skills and general office management are covered.

MOP 260
ADVANCED CODING I (4 credits)
Advanced level medical office coding course for CPT and ICD-10-CM coding systems. Students will apply the techniques learned to code patient services. Correct principles of coding, HIPAA tips and coding points will be covered. Prerequisite: MOP 160.

MOP 262
CASE STUDY CODING (3 credits)
Simulates on-the-job experience as a medical coder at a multi-specialty clinic. Students will be provided with the opportunity to utilize coding skills in an electronic environment. Prerequisite: MOP 260.

MOP 290
CLINICAL INTERNSHIP (8 credits)
On-the-job work experience. The student works at a medical facility off-campus. Prerequisite: The student must meet department criteria to be eligible for internship.

NGT 100
SAFETY FOR THE NATURAL GAS TECHNICIAN (1 credit)
Preparation to work in and perform routine safety precautions with natural gas. Students will gain knowledge and skills required to assist an injured or suddenly ill person before professional emergency care can be provided.

NGT 101
ELECTRICAL FUNDAMENTALS (3 credits)
Basics of electricity. Direct current (DC), alternating current (AC), electrical laws and symbols, circuit fundamentals, and the use of test equipment is taught. Electrical fundamentals related to heating, ventilation, air conditioning and refrigeration systems are emphasized. Projects are assigned using computer simulation programs and laboratory trainers.

NGT 102
GAS OPERATIONS AND MAINTENANCE (3 credits)
An introduction to the fundamentals of transportation, storage and the regulations pertaining to propane, butane and natural gas.

NGT 104
FOUNDATIONS OF NATURAL GAS TECHNOLOGY (2 credits)
 An introduction to various aspects of the gas industry including development, economics, equipment, systems, instrumentation, operations, and various associated scientific principles and processes. The course gives students a basic introduction to the Natural Gas Technology program. Addressed will be a variety of topics with emphasis on pre-drilling and drilling including; pre-drilling planning, drilling, circulation systems, construction basics, simple completions, overview of production processes and equipment.

NGT 105
GAS INSTALLATION LAB (3 credits)
 Applies curriculum studied in concurrent courses. Equipment operation including backhoe and loader operation, trencher and plow operations, directional boring and line locating.

NGT 108
CUSTOMER SERVICE (2 credits)
 Focuses on key information and skills for successful communication with customers. Students will learn how to determine a client's specific needs, and proper documentation for work performed. The course examines various service situations and develops an attitude of superior customer service which is critical to success.

NGT 110
TRENCHING AND EXCAVATION PRACTICES (2 credits)
 OSHA Excavation Standard and safety and health aspects of excavation and trenching. Course topics include practical soil mechanics and their relationship to the stability of shored and unshored slopes and walls of excavations, introduction of various types of shoring (wood timbers and hydraulic), soil classification, and use of protective systems.

NGT 112
GAS MEASUREMENTS AND CONTROLS (3 credits)
 Enables the student to apply common technical concepts used in the gas measurement industry. Computer based and instructor led training are blended with hands-on exercises to build a set of basic skills necessary to implement industry applied mathematics and physical laws necessary for advanced gas measurement training.

NGT 115
GAS MAPPING AND OPERATIONS (3 credits)

OPRV 105
SERVICE CENTER FUNDAMENTALS (2 credits)
 Introduction to the basic principles and working environment of a service center. Topics to be explored include: the proper use and care of hand and basic power tools, the use of precision measuring tools, test equipment and special tools, safe and proper use of lifting equipment and large shop tools such as hydraulic presses and tire equipment, as well as general shop safety, the language and vocabulary related to the ATV and motorcycle service industry, customer service and writing of work orders.

OPRV 120
BASIC ENGINE THEORY AND OPERATION (2 credits)
 Introduction to the basic design and operating principles and components of the internal combustion engine. Topics to be explored include: valve train design and component identification, ignition and fuel system identification and design, similarities and differences between 2 and 4 stroke cycle engines, similarities and differences between air cooled and water cooled engines and component failure identification.

OPRV 121
BASIC ENGINE LAB (2 credits)
 This lab will be based on Briggs and Stratton and Honda single cylinder overhead valve engines. Students will disassemble, measure components, grind valves and seats and in general rebuild the engine.

OPRV 124
ATV AND SNOWMOBILE SYSTEMS (2 credits)
 A general study of topics which make snowmobile and ATV service unique in the industry. Topics to be explored: 2 and 4 wheel drive systems, ski and track systems, air induction, cooling systems, skis and steering components.

OPRV 125
ATV AND SNOWMOBILE LAB (3 credits)
 Students will utilize information from lecture OPRV 124 to complete disassembly, repair and reassembly of sub-systems and components of ATVs and snowmobiles, as well as determine the root failures of components.

OPRV 130
ELECTRICAL/ELECTRONIC SYSTEMS (2 credits)
 General electrical theory and the principles of DC current operating in ATVs, motorcycles, snowmobiles and outdoor power equipment. Topics to be explored include: current flow, Ohm's law, voltage, amperage, circuit types, test equipment, symbols used in electrical diagrams and reading and understanding electrical diagrams in technical publications.

OPRV 137
MARINE MAINTENANCE (2 credits)
 Students will explore the use of fiberglass, composites, wood, and carpentry techniques that are utilized in the marine industry for structural elements as well as repairs and enhancements. Marine finishes and decking will be the core topics of this course. Injection molding and gel coat processes will be discussed.

OPRV 140
MULTI-CYLINDER 2 AND 4 CYCLE ENGINES (2 credits)
 General theory, design and operation of multi-cylinder engines as they relate to ATV's, motorcycles and snowmobiles. Topics to include: repair and maintenance of metric engines as well as American V-twin engines, precision measuring of root components and failure analysis.

OPRV 141
MULTI-CYLINDER ENGINES LAB (2 credits)
 Students will explore the physical components of multi-cylinder engines, utilizing shop equipment to perform basic repairs and rebuild of metric and American V-Twin engines. Cooling systems and fuel systems diagnosis to be discussed.

OPRV 142
ADVANCED MULTI-CYLINDER 2 AND 4 CYCLE ENGINES (2 credits)
 Continuation of topics covered in OPRV 140. Special attention given to precision engine building and customization. This class will be the technical basis for the OPRV 143 lab. Students will utilize printed technical data and parts manuals as well as Internet-based information to prepare for projects lab.

OPRV 143
ADVANCED MULTI-CYLINDER ENGINE LAB (4 credits)
 In this project lab, students will be responsible for diagnosing failures, estimating cost of repairs, acquiring technical data and parts list for repairs, as well as performing repairs on products supplied to MTI from industry. Secondary component of this lab will involve diagnosis test out on various ATVs, motorcycles and outdoor power equipment.

OPRV 150
HANDHELD POWER EQUIPMENT LAB (3 credits)
This lab will be based on the theories of two and four stroke engines as they pertain to hand-held equipment such as chain saws, weed eaters, leaf blowers and other hand-held devices. Parts look-up and a focus on Stihl hand-held products will be a core element of this course.

OPRV 185
INTERNSHIP (6 credits)
On-the-job training (OJT). Work a minimum of 160 hours in a service or shop environment.

OPRV 205
MOTORCYCLE COLLISION REPAIR (3 credits)
Students will be exposed to basic repair and restoration techniques of chassis and body of motorcycles. Students will also be able to understand and apply custom paint and discern the differences between water based and solvent based paints. Also covered will be dent repair and smoothing techniques.

OPRV 209
ADVANCED PAINT AND CUSTOM FINISHES (3 credits)
Students will be exposed to the theories and techniques of custom paint and finishes utilized in the high-end motorcycle and automotive industry. Water-borne and solvent-based paint systems as well as dent repair and smoothing techniques will be taught.

OPRV 235
INTRO TO FUEL INJECTION AND ELECTRONIC SYSTEMS (3 credits)
Operating principles and characteristics of modern motorcycle fuel injection and engine control systems. Electronic diagnostic procedures and fundamental fuel system troubleshooting and fuel mapping are core elements of this class. Advanced study of open and closed loop engine control and management systems, concentrating on diagnostic testing procedures and theory of operation. Dyno testing and electronic fuel mapping will be discussed in detail. Continuation of OPRV 130 Electrical/Electronic Systems.

OPRV 236
ADVANCED FUEL INJECTION AND ELECTRONIC SYSTEMS (3 credits)
A continuation of techniques and principles learned in OPRV 235. Students will learn intricate details of fuel mapping and how variations in inputs determine the final performance of an engine. A detail-oriented approach to power tuning and fuel management and diagnostic procedures utilized in industry will be the focus. Extensive lab time and a firm understanding of electrical and electronic theory required.

OPRV 240
MOTORCYCLE SYSTEMS LAB (2 credits)
A continuation of techniques and principles learned in OPRV 140. In this class students will focus on intricate details of custom fuel mapping, high performance cylinder heads and pistons and how variations of parts can determine the final performance of an engine. A detail-oriented approach to power tuning and diagnostic procedures utilized in industry will be the focus. Extensive lab time and a firm understanding of how performance parts work together to make increases in horsepower and torque.

OPRV 260
MARINE TECHNOLOGY (2 credits)
Introduction to all elements of the marine industry. Primary emphasis on personal watercraft and inboard/outboard technologies utilized on lakes and inland waterways. Topics covered include safety and protocol in the service environment, basic watercraft and boat design, marine electrical theory, engine and drive system design and theory.

OPRV 261
MARINE TECHNOLOGY LAB (3 credits)
Hands-on lab projects discussed in OPRV 260 Marine Technology. Safety practices in the service environment and on the water are covered in detail. Service techniques and practices, lubrication and fuel system diagnosis, electrical system diagnosis and drive system repair are explored.

OPRV 262
ADVANCED MARINE TECHNOLOGY AND DIAGNOSTICS (2 credits)
A continuation of techniques and principles learned in OPRV 260.

OPRV 263
ADVANCED MARINE TECHNOLOGY AND DIAGNOSTICS LAB (3 credits)
A continuation of practical applications of the theories and principles students have acquired throughout OPRV 260 and OPRV 261. Students will dedicate more time to diagnosing electrical and fuel system faults, complete component failure analysis exercises and documentation of actual operating fault conditions in an approved test setting. Proper documentation and job pricing strategies will be explored.

OPRV 280
SUCCESSFUL SERVICE MANAGEMENT (1 credit)
Utilization of industry software and service management practices for evaluation of lab performance. Exercises related to service information dispensed in classroom sessions will be completed.

OSHA 100
OSHA 10 TRAINING - GENERAL (1 credit)
An overview of OSHA (Occupational Safety and Health Administration) standards focusing on hazard recognition and injury and illness prevention. The 10-hour general program is intended to provide entry-level workers with awareness of hazards in and around the work site. Emphasis is placed on recognition and prevention and helps create a culture of safety. Upon successful completion the student will receive OSHA 10 certification.

OSHA 101
OSHA 10 TRAINING - CONSTRUCTION (1 credit)
An overview of OSHA (Occupational Safety and Health Administration) standards focusing on hazard recognition and injury and illness prevention. The 10-hour construction program is intended to provide entry-level construction workers with awareness of hazards in and around the construction work site. Emphasis is placed on recognition and prevention and helps create a culture of safety. Upon successful completion the student will receive OSHA 10 certification.

PAT 100
INTRO TO GPS TECHNOLOGIES (1 credit)
Students will be introduced to basic GPS principles including GPS corrections, constellations, navigation and primary industry uses. Students will have hands on experience with different data collection techniques using tablets and Trimble GPS devices.

PAT 102
PRINCIPLES OF GPS/GIS (2 credits)
Students will be introduced to basic GPS principles and how they are applied to precision agriculture and GIS applications. Different GPS corrections and constellations and primary industry uses will be introduced as well as different GPS terms and how they are used in the industry. Once an aptitude is gained for the GPS, the course will shift to GIS operations in the agriculture industry.

PAT 107
BASIC HYDRAULICS (2 credits)
Industry relevant skills including how to operate, install and analyze performance of basic hydraulic systems. Fundamentals of hydraulic systems used in industrial applications are presented.

PAT 111
WIRELESS COMMUNICATIONS (2 credits)
Focuses on the wireless industry and how it pertains to agriculture and transportation technologies. This course will provide fundamentals of wireless communications.

PAT 121
PRECISION AG ELECTRONICS (4 credits)
Introduction to the components of electronics. Also introduced will be digital fundamentals including combinational and sequential logic circuits and an overview of electronics math.

PAT 130
TECHNOLOGY AND INSTALLATION LAB I (4 credits)
This lab will consist of the practical use and installation of a variety of GPS/Precision Ag products. Students will work on real world applications including auto-steer and product control installation, mapping and recording data points with GPS, and land preparation and planting at the Precision Ag land plot. Students will become familiar with different manufacturers' products.

PAT 140
GUIDANCE SYSTEMS AND REMOTE SENSING (3 credits)
Different types of guidance systems available for agricultural machinery. The course will discuss the sensors and devices involved with different types of guidance systems from different manufacturers, including the advantages, accuracy and different features of those systems. Students will install, setup and calibrate guidance systems from different suppliers. Also, they will perform situational analysis for each type of guidance system and will be trained in troubleshooting and resolving faulty installation.

PAT 142
DATA COLLECTION (3 credits)
Students will be introduced to various data collection tools used in the precision technology field. As a comprehensive data collection course, students will be studying yield monitor systems, crop vigor sensor systems, soil sampling and topography mapping systems, as well as a multitude of other tools used in data collection. As a part of the study of yield monitor systems, students will be involved with harvesting and data collecting at the precision technology land lab. Also included will be an introduction to the GIS software programs involved in interpreting and managing this data.

PAT 151
PRECISION AG ELECTRONICS LAB (3 credits)
Experience with soldering, hand tools, components, color code, Ohm's law, and reading circuit diagrams. Work with ohmmeters, ammeters, voltmeters, power supplies and other devices included. This lab examines AC/DC circuit characteristics, including capacitance and inductance and explores the P/N junction as it applies to diodes and bipolar junction transistors.

PAT 190
INTERNSHIP (6 credits)
Supervised internship performed off-campus in a precision technology business setting.

PAT 203
INTRO TO VARIABLE RATE SYSTEMS (3 credits)
Students will learn about the components of Variable Rate (VR) application systems. They will study the principles of VR application equipment and the economic and environmental impact of variable rate applications. Students will study VR sensor-based controllers for fertilizer and chemical applications and the use of soil maps, yield maps and GPS/GIS for map-based VR applications of granular and liquid fertilizers and chemicals.

PAT 210
GIS APPLICATIONS (4 credits)
This course will introduce the student to field data collection techniques using geocoded field data recorders along with GIS systems. Also included: downloading field data; using computer based GIS software for data management; and processing for agronomic-based GIS systems to include soil sample, field boundaries, field attributes, yield data, ground control points and other associated field data.

PAT 230
TECHNOLOGY AND INSTALLATION LAB II (4 credits)
A continuation of PTS 203.

PL 111
FUNDAMENTALS OF DC/AC (3 credits)
Basic electricity as it applies to high voltage lines. The student learns to apply Ohm's Law for DC circuits. The student learns basic generation and the effects of inductance and capacitance in the AC circuit.

PL 120
TRANSFORMER CONNECTIONS (3 credits)
Application of electrical formulas to practical circuits. Problems such as series and parallel circuits, solving for inductive and capacitive reactance, impedance, apparent, real and reactive power and power factor are common. Transformer, regulator, capacitor and metering applications are covered in detail in this course.

PL 141
POWER GRID DESIGN (2 credits)
Fundamental theory of high voltage power grid systems. The generating systems, transmission, subtransmission, distribution and service are studied.

PL 143
POWER GRID DESIGN II (2 credits)
Continuation of PL 141.

PL 150
FIELD TRAINING I (4 credits)
Basic theory and design for the installation and construction of a high voltage overhead system. Installation and construction of an actual overhead system will be part of a lab project.

PL 151
CONSTRUCTION OF UNDERGROUND LINES (4 credits)
Basic theory and design for the installation and construction of a high voltage underground system. Installing and constructing an actual underground system will be part of a lab project.

PL 154
MAINTENANCE OF UNDERGROUND LINES (4 credits)
System protection, sectionalizing and grounding procedures and basic fault procedures on underground low and high voltage lines.

PL 156
FIELD TRAINING II (4 credits)
Fundamental operation and maintenance of overhead distribution and transmission lines. Hands-on application will be utilized by operating and maintaining the lines built as part of PL 150.

PL 171
UTILITY SAFETY I (1 credit)
OSHA, APPA and NESC rules, procedures and codes applied to the design and construction of overhead and underground lines.

PL 172
UTILITY SAFETY II (1 credit)
Continuation of PL 171. Specific OSHA, APPA and NESC rules that apply to operating and maintaining overhead and underground lines. Includes hands-on procedures and pole top rescue.

PSYC 100
INTRODUCTION TO PSYCHOLOGY (3 credits)
This course is designed to give the student a basic understanding of the psychology of human behavior. The student will be given exposure to the concepts, terminology, principles and theories that comprise an introductory course in psychology. Topics covered are to synthesize the broad range of knowledge about psychology, to encourage critical thinking and to convey a multi-cultural approach that respects human diversity and individual differences.

PSYC 101
GENERAL PSYCHOLOGY (3 credits)
Designed to relate psychology to everyday life. Students will gain a basic understanding of how we develop throughout our life span and how we learn throughout our lives. Special emphasis is placed on understanding causes, symptoms and treatment of the most prevalent psychological disorders in our society. An empathetic perspective for those who suffer from these disorders and how the disorders affect their families is stressed.

PTD 100
PERMIT PREP (1 credit)
An introduction to the truck driving industry. Review of commercial transportation along with driver qualifications. This course covers the material required to obtain a commercial license permit (CLP) - the general knowledge, air brakes, and combination vehicle sections of the South Dakota Driver's License Manual.

PTD 104
VEHICLE CONTROL SYSTEMS (1 credit)
Students will understand the importance and functions of all the controls and instruments found in the cab of today's tractors and straight trucks. Topics include the identification of primary and secondary vehicle controls. Acceptable operating range: electrical and coolant systems monitoring and warning devices will be covered. General vehicle maintenance will also be covered.

PTD 106
VEHICLE IN MOTION (2 credits)
An introductory course beginning with safely entering and exiting a commercial vehicle, other topics include gear shifting patterns, common shifting errors, double clutching, backing principles, backing maneuvers and procedures for parking. Students will spend time in the driving simulator as well as behind the wheel of a commercial vehicle. A CDL Class A permit is required.

PTD 108
ENTRY LEVEL DRIVER BASICS (2 credits)
Students will understand the different governing entities and regulations that affect commercial drivers and commercial vehicles. Reasoning for hours of service and use of log books/electronic logging devices (ELDs). Understanding the effect of fatigue and how to avoid it. Other topics include distracted driving, violations, driver wellness, and whistleblower protections.

PTD 112
TRIP PLANNING (2 credits)
Students will design the most effective, efficient, safe and legal route between two points. A detail-orientated approach to paperwork requirements, map reading, route selection, cargo restrictions, traffic conditions and weather are essential to a successful, professional delivery.

PTD 116
EXTREME DRIVING CONDITIONS (1 credit)
Students will have increased awareness and preparation for adverse weather conditions (including snow, ice, rain, and fog), freeing a stuck vehicle, breakdowns, and mountain driving. An understanding of causes of skidding and jackknifing and how to avoid them. Students will spend time in the driving simulator as well as behind the wheel of a commercial vehicle. A CDL Class A permit is required.

PTD 118
ROAD DRIVING (3 credit)
Students will operate a Commercial Vehicle (CV) in a variety of driving situations. Topics and experience in this course include coupling and uncoupling, speed management, space management, communication and emergency maneuvers. Students will spend time in the driving simulator as well as behind the wheel of a commercial vehicle. A CDL Class A permit is required.

PTD 190
INTERNSHIP (6 credits)
Operation of a commercial motor vehicle (CMV) with an experienced driver trainer for an 8-week internship period. During this internship, students will apply the knowledge and skills that they obtained in the learning environment. Students will gain additional driving skills from an experienced driver trainer. Satisfactory completions of assignments will be required during the internship using online computer-based training lessons.

RAD 110
INTRO TO RADIOLOGIC TECHNOLOGY AND ETHICS (2 credits)
This course is an introduction to radiologic science. The content prepares students for academic study and clinical experiences. Topics include introduction to imaging, professional organizations, basic patient care, infection control, professional ethics, and medical law.

RAD 120
INTRODUCTION TO CLINICAL RADIOLOGY (2 credits)
This course will introduce the student to the clinical aspect of their training. Topics include critical thinking, human diversity/patient interactions, medical emergencies, aseptic/non-aseptic technique, pharmacology, contrast media, and venipuncture. Prerequisites: MA 101, MA 103, All previous technical courses

RAD 140
RADIOLOGY PRINCIPLES I (5 credits)

This course creates a foundation for understanding the principles of radiographic technique and quality. Included is a description of the basic physical principles of measurement, energy, atomic structure, electricity, magnetism, and their application to radiation production. The course also offers an overview of how the X-ray machine produces x-radiation. Emphasis is on radiographic image quality through presentation of prime exposure factors, solving technical problems, and making adjustments to correct those problems.

RAD 142
RADIOLOGY PRINCIPLES II (5 credits)

This course creates a foundation for understanding the fundamental concepts, terminology, and applications of digital imaging as it relates to radiologic technology. Included is a description of digital image acquisition, display, and archiving. Advanced x-ray imaging equipment will be introduced, including surgical radiography, digital fluoroscopy, interventional radiography, and computed tomography. Prerequisites: MA 101, MA 103, All previous technical courses.

RAD 150
RADIOGRAPHIC PROCEDURES I (6 credits)

This course provides the student with the knowledge necessary to perform radiographic procedures relative to the upper and lower extremities and chest. Emphasis will be placed on radiographic terms, detailed anatomy, positioning, and image analysis guidelines which includes identification of required anatomy and recognizing diagnostic quality images.

RAD 152
RADIOGRAPHIC PROCEDURES II (6 credits)

This course provides the student with the knowledge necessary to perform radiographic procedures relative to the cranium, ribs AND sternum, vertebral column and abdomen. Emphasis will be placed on radiographic terms, detailed anatomy, positioning, and image analysis guidelines which includes identification of required anatomy and recognizing diagnostic quality images. Prerequisites: MA 101, MA 103, All previous technical courses.

RAD 154
RADIOGRAPHIC PROCEDURES III (2 credits)

This course provides the student with the knowledge necessary to perform radiographic procedures relative to the urinary AND digestive systems. Emphasis will be placed on radiographic terms, detailed anatomy, positioning, and image analysis guidelines which includes identification of required anatomy and recognizing diagnostic quality images. Prerequisites: MA 101, MA 103, All previous technical courses.

RAD 160
RADIOGRAPHIC PATHOLOGY (3 credits)

This course will introduce the student to the concept of disease and its effects on the human body. The relationship of pathology and diseases to various radiographic procedures and radiographs will be discussed. Prerequisites: MA 101, MA 103, All previous technical courses.

RAD 170
RADIATION BIOLOGY AND PROTECTION (3 credits)

This course provides an overview of the effects of ionizing radiation on cells in the human body. Topics include factors affecting biological response, radiation exposure monitoring, units of measurement, and radiation protection for patients, personnel, and the public. Prerequisites: MA 101, MA 103, All previous technical courses.

RAD 211
CLINICAL RADIOLOGY I (8 credits)

This course is the first of a three part series of clinical courses. Students will focus on the basic application of radiography in the clinical setting. Under supervision, students develop technical skills and procedural knowledge through observation and participation in radiographic studies. Students will also complete radiographic exam competencies. Prerequisites: All technical courses.

RAD 212
REGISTRY REVIEW I (1 credit)

This course is designed to utilize a structured series of mock registry exams administered over the course of 3 semesters (along with RAD 222 and 232) to assist the student in maintaining knowledge gained and to help them prepare for the ARRT examination to be taken after graduation. This series of tests asks questions in a fashion similar to that of the actual registry exam. Prerequisite: All technical courses.

RAD 221
CLINICAL RADIOLOGY II (11 credits)

This course is the second of a three part series of clinical courses. Students will focus on more advanced application of radiography in the clinical setting. Under supervision, students continue to develop technical skills and procedural knowledge through participation in radiographic studies. Students will also complete radiographic exam competencies. Prerequisites: All technical courses.

RAD 222
REGISTRY REVIEW II (1 credit)

This course is designed to utilize a structured series of mock registry exams administered over the course of 3 semesters (along with RAD 212 and 232) to assist the student in maintaining knowledge gained and to help them prepare for the ARRT examination to be taken after graduation. This series of tests asks questions in a fashion similar to that of the actual registry exam. Prerequisite: All technical courses.

RAD 231
CLINICAL RADIOLOGY III (11 credits)

This course is the third of a three part series of clinical courses. Students will focus on preparing for the professional responsibilities needed for clinical practice in the healthcare environment. Under supervision, students will refine technical skills and procedural knowledge through participation in radiographic studies. Students will also complete radiographic exam competencies and explore elective practice areas of radiology. Prerequisites: All technical courses.

RAD 232
REGISTRY REVIEW III (1 credit)

This course is designed to utilize a structured series of mock registry exams administered over the course of 3 semesters (along with RAD 212 and 222) to assist the student in maintaining knowledge gained and to help them prepare for the ARRT examination to be taken after graduation. This series of tests asks questions in a fashion similar to that of the actual registry exam. Prerequisite: All technical courses.

RTH 200
INTRODUCTION TO RADIATION THERAPY (2 credits)

This course is an exploration of the foundation of radiation therapy practices and the variety of roles for the professional in the delivery of health care. Principles of practice, professional responsibilities, medical law and ethics will be addressed along with program expectations.

RTH 201
NURSING AND PATIENT CARE ISSUES (2 credits)
This course will focus on the role of the radiation therapist in overall disease management. It will prepare students to work directly with patients in a health care setting and covers assessment, examination and monitoring of patients, symptom management and the management of oncologic emergencies. Patient issues such as pain control, nutritional counseling, patient education, death and dying will be explored. Chemotherapeutic drugs will be introduced and discussed.

RTH 202
RADIATION THERAPY PHYSICS I (3 credits)
This course applies the concepts of radiation oncology physics as it is practiced in the clinic. Interactions of ionizing radiation, measurement of ionizing radiation, nuclear transformation and the quality of X-ray beams are discussed. This course provides the student with an understanding of the different types of radiation treatment units and their operating principles. This course contains a review of mathematics, basic principles of physics, atomic structure, electro-magnetic and particulate radiation.

RTH 203
RADIATION THERAPY PHYSICS II (3 credits)
This course will explore the concepts of radiation physics as it applies to the practice of radiation therapy. Scatter radiation analysis, isodose curves, patient contouring, dosimetric calculations, treatment planning procedures and electron beam therapy are introduced.

RTH 205
CLINICAL RADIATION ONCOLOGY (4 credits)
This course will explore cancer: its detection, diagnosis and prognosis. The management of neoplastic disease and its mechanism of spreading through a multidisciplinary approach will be discussed. Rationale for treatment techniques such as beam type, dose fractionation, volume, simulation, beam modification devices, field arrangements, dose limiting critical structures as well as surgical and chemotherapeutic considerations are presented.

RTH 206
SIMULATION AND MEDICAL IMAGING (3 credits)
This course introduces simulation equipment and techniques. Topics include patient immobilization, localization, simulation, documentation, patient positioning, treatment delivery parameters, prescriptions and patient care. Imaging techniques specific to radiation therapy will also be discussed. A lab component is included in this course.

RTH 207
RADIATION BIOLOGY (1 credit)
This course covers the biological effects of ionizing radiation in living tissue, including specific cell and tissue radiosensitivity, radiation syndromes and related effects, as well as basic biological mechanisms that bring about somatic and genetic effects. Prerequisites: All previous technical courses.

RTH 209
RADIATION THERAPY TOPICS (2 credits)
This course is designed to explore various radiation therapy topics such as quality control programs and protocols for the radiation therapy department, various radiation therapy operational issues and CQI project development, evaluation and assessment techniques. Infection control and pharmacology will be reviewed. Students will become HIPAA certified during this course. The course will provide the student with the basic concepts of radiation sources: detection and measurement, shielding and room design, source handling, surveys and personnel monitoring and maximum permissible dose. Prerequisites: All previous technical courses.

RTH 210
CLINICAL PRACTICUM I (10 credits)
(35 hours clinical experience per week for entire semester) - The clinical practicum serves as an orientation to radiation therapy where students are given an opportunity to develop technical and patient care skills and knowledge through structured rotations and assignments in the radiation therapy department. Treatment competencies and related objectives will be used to measure clinical outcomes. Prerequisite: All technical courses.

RTH 211
MODERN RADIATION THERAPY RESEARCH (3 credits)
This course is designed for the student to research and prepare a written scientific paper and oral presentation on an emerging technology in radiation therapy. Prerequisite: All technical courses.

RTH 212
REGISTRY REVIEW I (1 credit)
This course is designed to prepare students for the required national certification exam. Mock board exams will be given along with various assignments geared to reinforcement of previously discussed concepts. Prerequisite: All technical courses.

RTH 213
CLINICAL PRACTICUM II (8 credits)
(35 hours clinical experience per week for entire semester) - A continuation of RTH 210. Students are expected to complete all required competencies in this rotation. The final section of clinical education ensures that the student is ready for employment. Prerequisite: All technical courses.

RTH 214
REGISTRY REVIEW II (1 credit)
Continuation of RTH 212. This course is designed to prepare students for the required national certification exam. Mock board exams will be given along with various assignments geared to reinforce previously discussed concepts. Prerequisite: All technical courses.

SD 120
INTRO TO INDUSTRIAL MOTOR CONTROLS (3 credits)
This course introduces the fundamental concepts of electromagnetic control systems for both AC and DC. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors and other control devices. Prerequisite: Successful completion of all first year EC and SD classes.

SD 136
PROGRAMMING FOR SCADA (2 credits)
An introduction to program script languages using P-Basic and Python. The use of Microcontroller, Raspberry Pi and Arduino will give the student the basic concept of the understanding of variables, strings, lists, and other data structures. The goal is for the student to design a home automation system using Raspberry Pi and Arduino.

SD 157
SCADA ELECTRONICS LAB (3 credits)
Semiconductors and integrated circuit devices are discussed. Emphasis is placed on troubleshooting of more complex electronic circuits, push pull amplifiers, discrete components, operational amplifiers and basic digital circuits. An introduction to programming micro-controllers and various types of sensors is also introduced. Prerequisite: Successful completion of all first semester SCADA classes or equivalent.

SD 159
PROGRAMMABLE LOGIC CONTROLLERS (3 credits)
This course introduces students to programmable logic controllers (PLC's) using the Allen-Bradley SLC500 and RSLogix 500 programming software. Elementary ladder logic and discrete I/O instructions, counters, timers, program development techniques and troubleshooting are covered. Prerequisite: successful completion of Intro to Industrial Motor Controls (SD120) class.

SD 160
INDUSTRIAL WIRING (3 credits)
Focuses on the principles and applications of industrial wiring. Topics include electrical safety practices; basic National Electrical Code as it relates to industrial wiring; circuit design; transformers; switch gear; and generation principles. Students will also read, understand and create electrical schematics using AutoCAD electrical edition.

SD 205
PROCESS CONTROLS (3 credits)
Emphasis is placed on the study of the concepts and language of controls to guide the technician on how to analyze and design control systems. Terminology, concepts, principles, procedures and computations used in the controls field are studied, including all phases of sensors and outputs.

SD 225
INTRO TO SCADA SOFTWARE (4 credits)
Covers the basics of using a graphical software package to create a user-friendly control screen. Interfacing the HMI to Allen Bradley and Horner PLCs will be performed through OPC server software. The graphical software being used in the SCADA lab is Cscape and WonderWare.

SD 229
NETWORKING CONCEPTS (3 credits)
A complete overview of the rapidly evolving field of wireless networks. Device level bus structures, industrial network protocols, data cabling and local area networks found in today's industrial communication networks will be examined. Students will design and construct a telemetry system using a variety of communications media such as 900Mhz, 2.4 Ghz, and 5 Ghz wireless technologies; serial communications including RS232, RS485, DH+, DH 485, Ethernet over CAT5; and DeviceNet, Data Highway, Hart, DNP3, and ASI. Students will learn to select the appropriate technologies and standards for a given application and ensure that the best practice is followed in designing, installing and commissioning the data links for fault-free operation.

SD 230
INTRO TO VISUAL BASIC (3 credits)
This course introduces Graphical User Interfaces (GUIs) using Microsoft Visual Basic in the Microsoft Windows environment. Students design, code and run integrated Visual Basic applications utilizing the multiple-document interfaces, object-linking and embedding and dynamic-link library features of Microsoft Windows.

SD 239
ADVANCED INDUSTRIAL NETWORKING (3 credits)
Methods for labeling, identifying, documenting and testing during installation of a telecommunications infrastructure will be studied. Also covered: selection of cable, splicing, termination and testing. Prerequisite: SD 229.

SD 259
ADVANCED PROGRAMMABLE LOGIC CONTROLLERS (3 credits)
Continuation of SD 159.

SD 270
SCADA TESTING AND CONTROL LAB (7 credits)
Breakthroughs in communications and microprocessor technologies have made it possible for industry to automate control systems and aid in the collection of management data. Using PLCs, students will learn what components are used and how these systems work. Laboratory work will provide the student with the experiences in the identification, selection and programming of equipment needed to make a fully operational SCADA system. Prerequisite: successful completion of all SCADA courses previously required up to this point.

SDLA 200
LEADERSHIP FUNDAMENTALS (2 credits)
Creating a culture of leadership requires understanding foundational principles. This course starts with the Golden Circle that contains three key elements of leadership: The Why, What, and How. A base element of a leader is understanding and challenging their own belief systems, the belief systems of their organization, world, and fellow team mates. Leaders understand these three key pieces to further understand and develop their character and competence. A focus on emotional intelligence and personal 'wiring' is identified and prepared for coachable moments throughout the course. We also look to increase understanding in managing and leading generations in the workforce, communicating across cultures, thinking differently about differences and fostering an inclusive environment.

SDLA 203
MANAGING RESPONSIBILITY (2 credits)
Personal development and career growth provides a document and path for specific actions that are consistent with a set of values and principles that will result in producing a leader that is desired by the person and the organization. Personal growth and development planning will produce an action-focused plan to be followed across a leader's career path that will ensure continuous, timely, and targeted growth and development occurs. Management essentials include: Challenges in transitioning roles and responsibilities; directing, delegating, and managing a diverse team; and recognizing and managing toxic leadership, peers, and employees. An acute understanding of financial intelligence is gained through essential concepts of finance in budgeting, forecasting, and planning. Key financial skills include: Monitoring financial health, understanding the income statement, the balance sheet, the cash flow statement and navigating an annual report. Marketing essentials are studied and implemented.

SDLA 206
LEADERSHIP CULTURE (2 credits)
The intent of this course is to bring more clarity and understanding to the topic of Leadership Culture and demystify it. Leaders can then use Leadership Culture as the powerful tool it can be in leading and creating a sustainable high performance organization. Maintaining a positive Corporate culture in the ever moving business world can be a challenging balancing act. For hiring purposes students will become more aware of the importance of finding the correct "fit" between the new hire and the organization. The better the "fit", the better the prospect for organizational and individual success.

SDLA 207
RESILIENCY FOR LEADERS (2 credits)
Human beings face intensity every day from forces inside and out. Done well, we bend without breaking and carve our own path to greatness. RESILIENCE IS THE WAY. To be relevant, we must have a solid understanding of ourselves, our team and how we perform, and how we recover. We must be able to apply our learning; we must lean forward, deepen our knowledge of self-regulation and how to apply skills to master trying events. As leaders, we must inspire ourselves and our teams to recognize and utilize the inherent and sometimes unrecognized skills of resilience that each person possesses and to apply them in various settings. As leaders, we inspire to commit to improved choices and outcomes. Resilient leaders are those who have decided to stay the course, adjusted their lifestyles as needed to ensure they maintain their skill set, heart-set, and mindset. A resilient leader is one who can sustain optimal well-being and performance even under the most difficult of conditions. This includes balancing their personal, family, and organizational needs. A focus is on: Having the courage to see and meet life exactly as it is, choosing to learn how to respond to each adversity with confidence, hope and renewed vigor. Ways to build resiliency and stress management are put into day-to-day practical application.

SDLA 209
COURAGEOUS AND INSPIRATIONAL LEADERSHIP (2 credits)
This course focuses on the subject of influence and its application and effect on leadership. Identification of the five distinct influence styles as well as the advocating and uniting elements. Participants will learn methods to ensure effectiveness with rationalizing, asserting, negotiating, inspiring and bridging as well as what situations demand what type of influence style. Elements of managing upward, developing relationships, communicating and negotiating are explored throughout the leadership structures (traditional and matrix). A focus on loyalty AND engagement with regard to how long-term loyalty develops/affects profitability, builds capability and delivers value. Leaders must also set the direction, align people, and motivate others. Recognizing the skills and characteristics of effective leaders, creating an inspiring vision, as well as energizing people to support and work towards goals are imperatives.

SDLA 214
TALENT MANAGEMENT (2 credits)
Building a high performing team is the goal of leaders. A team is defined as a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable. The desired outcome is a team that can achieve true interdependency and recognize that they cannot complete their mission without the special abilities that each brings to the arrangement. To foster entrepreneurial and innovative mindsets we learn how to manage diverse work groups to produce more and better ideas that encourage innovation when developing products and work processes. Team Leadership AND Management skills include: establishing a team with the right mix of skills and personalities, creating a culture that promotes collaborative work, focus on diagnosing and overcoming common problems that impeded team progress, and learning to take corrective measure to remove team problems and improve team performance. Virtual team management is also targeted identifying the formation and structure of virtual teams to build trust and keeping the team on track.

SDLA 215
ETHICS AT WORK (2 credits)
Comprehension of and experience with Ethics is critical to a leaders success. Participants will take this complex topic and put it squarely into their working world, day to day environment, activities, and leader behaviors. Utilizing their personal position of ethics, an understanding of right and wrong that is largely based upon our personal value structure and moral beliefs. These values and morals may adjust as we mature, as society changes, and as we become settled into who we are as an adult but our core ethics remain foundational. Exposure to organizational ethics will be provided. Ethics in the 21st century business world is a key element to success and sustainability for the organization and its leaders. Focus areas include: Ethical and legal obligations, employee/team development, performance management/ measurement, benefits and challenges of engaging employees, treating others fairly, and engaging your team.

SDLA 223
CRISIS MANAGEMENT (2 credits)
Crisis is typically characterized by a high degree of instability and has the potential for extremely negative results that can endanger the continuity of the organization. Although no two crises are the same, there are common traits evident in each one: a crisis is unexpected and unplanned for, it exerts a high impact on human needs, emotions, and behaviors. Effective crisis leadership is responding to the human needs, emotions, and behaviors that are generated by the crisis. People are most inclined to follow a leader who is reassuring, exhibits control under the stressful conditions of the crisis, and meets the needs of the people for whom they are responsible. Preparedness is important so the decisions made, actions taken, and the outcomes that result are focused on the organization, people, and environment for which we are responsible. Focus is on gaining an appreciation for the benefits that come from failure situations. Failure is a matter of interpretation. In order to learn from failure, leaders must locate the "teachable moments" hidden in the failure and then pick them out and use them to improve chances of future success. A focus is on looking at failure as a learning tool, recognizing practice and time factors in achieving success, and taking appropriate risks.

SDLA 298
MENTORSHIP AND COACHING I (4 credits)
Organizations increasingly recognize the need for professionals who possess the skills to function in the global economy and are ready to take on leadership and supervisory roles. Optimizing the leadership pipeline and closing the leadership gap depends on the organization's ability to choose and prepare the best leaders for tomorrow. This building of character and competence of developing leaders comes with a partnership of the intra-company mentorship. We focus on the relationship building as well as the mind-set, skill-set, tool-set, and heart-set of future leaders to empower them to confront the leadership challenges of the 21st century. A focus is on developing leaders in: talent, engagement, loyalty, preparedness, diversity, learning and growth. Creating a Mentorship Plan and Personal Development Plan is held throughout the course and in constant review/change.

SDLA 299
MENTORSHIP AND COACHING II (4 credits)
The mentoring partnership matters. Coaching matters. Understanding and strengthening mentoring-coaching skills facilitates the professional growth of self, team and the organization. Techniques utilizing building team performance is centered around interpersonal needs and behaviors. A variety of effective communication skill-sets are required and developed with courage and candor. Setting goals, realistic goals matters. As humans, we must hold ourselves and help others hold themselves accountable to realistic goals, prioritize tasks, and track milestones to improve performance and morale.

SLPA 101
INTRODUCTION TO SPEECH-LANGUAGE PATHOLOGY ASSISTANT (3 credits)
This course provides an overview of the field of speech-language pathology, including professional standards, legal and ethical issues and scope of responsibilities of the speech-language pathologist and the speech-language pathology assistant in health care and educational settings.

SLPA 102
CLINICAL OBSERVATION I (1 credit)
This course covers beginning clinical observation of practices and procedures in speech-language pathology and combines on-site observations with class discussion. Eight hours of observation in educational settings is required. Prerequisites: SLPA 101, 104, 105 and 106.

SLPA 103
CAREER SEMINAR (1 credit)
This course covers the promotion of professional growth opportunities for speech language pathology assistants. Students will explore tools and concepts necessary during the job seeking process and examine professional development as a new employee.

SLPA 104
ANATOMY AND PHYSIOLOGY OF SPEECH AND HEARING (3 credits)
This course covers the fundamentals of anatomy, physiology and neurology related to speech production and hearing. Systems studied include respiration, phonation, articulation, resonance, hearing and neurological. In addition, information regarding feeding and feeding strategies will be covered.

SLPA 105
SPEECH AND LANGUAGE DEVELOPMENT (3 credits)
This course covers the study of normal speech and language development. Topics include communication development and differentiation of normal from disordered communication. Hearing development, literacy development and language diversity will also be addressed.

SLPA 106
INTRODUCTION TO PHONETICS (3 credits)
This course provides a study of the articulatory foundations of the description and classification of speech sounds. It introduces the International Phonetic Alphabet (IPA), physiological properties of the speech mechanism, methods of transcription and dialectal variations. The emphasis will be on the auditory discrimination necessary for recording normal and disordered articulatory production.

SLPA 111
INTRODUCTION TO COMMUNICATION DISORDERS AND TREATMENT (3 credits)
This course provides an overview of communication disorders, including classification, assessment and remediation of speech, language, literacy, swallowing and hearing disorders in children and adults. It addresses the role of the speech-language pathologist and audiologist in educational and medical settings and examines multicultural and multilingual diversity, developmental disabilities and collaboration with educators. Prerequisites: SLPA 101, 104, 105 and 106.

SLPA 112
CHILD GROWTH AND DEVELOPMENT (3 credits)
This course covers developmental stages of children from conception through adolescence including major theories of development and their application to parenting, teaching and other interactions with children.

SLPA 120
VOICE AND ARTICULATION FOR EFFECTIVE COMMUNICATION (3 credits)
This course covers speech and voice production with an emphasis on improving vocal skills for effective communication. Prerequisites: SLPA 101, 104, 105 and 106.

SLPA 200
INTRODUCTION TO AUDIOLOGY AND AURAL REHABILITATION (2 credits)
This course is an introduction to audiology, audiograms, hearing screening and hearing assessments. Also provided is an introduction to aural rehabilitation, hearing aids and hearing assistive technologies (HAT). Prerequisites: SLPA 102, 103, 111 and 120.

SLPA 202
CLINICAL OBSERVATION II (2 credits)
This course covers continued clinical observation of practices and procedures required in speech-language pathology in preparation for clinical fieldwork and combines on-site observations with class discussion. Seventeen hours of observation in educational settings is required. Prerequisites: SLPA 102, 103, 111 and 120.

SLPA 205
ADULT COMMUNICATION DISORDERS (2 credits)
This course provides an introduction to adult neurogenic communication disorders and speech and language therapy techniques used to treat these disorders. It examines the communication disorders of aphasia, dysarthria, apraxia, right hemisphere disorders, dementia, and traumatic brain injury.

SLPA 210
ALTERNATIVE AND AUGMENTATIVE COMMUNICATION (2 credits)
This course provides an introduction to common forms of augmentative and alternative communication, including manual communication and low- and high-tech AAC systems. Prerequisites: SLPA 200, 202, 220 and 230.

SLPA 211
SCREENING PROCESSES (2 credits)
This course covers screening tools and processes used for speech, language and hearing screening including the administration of screening and completion of protocols with clients of varied ages. Prerequisites: SLPA 200, 202, 220 and 230.

SLPA 220
SPEECH DISORDERS AND INTERVENTION (3 credits)
This course focuses on speech sound disorders and therapy techniques to implement articulation and phonological therapy. Session planning, reporting progress and organization of therapy interaction are introduced. Cueing, reinforcement, feedback and choosing materials are covered. This course also reviews therapy approaches for neuromotor speech disorders, fluency and voice disorders. Prerequisites: SLPA 102, 103, 111 and 120.

SLPA 230
LANGUAGE DISORDERS AND INTERVENTION (3 credits)
This course explores language disorders and various intervention approaches. Students are introduced to therapy techniques appropriate for treating language delays and acquired disorders with toddler, preschool and school-aged populations. The course also addresses intervention for culturally and linguistically diverse children, as well as intervention for students with learning and developmental disabilities. Prerequisites: SLPA 102, 103, 111 and 120.

SLPA 235
CLINICAL MANAGEMENT AND PROCEDURES (4 credits)
This course covers organizational and functional skills required in the speech-language pathology workplace. Topics include interdisciplinary and supervisory relationships, client and public interaction, therapy plans, lesson plans, safety issues, technical writing, data collection, record keeping, computer applications, multicultural issues and behavior management. Prerequisites: SLPA 200, 202, 220 and 230.

SLPA 240
CLINICAL FIELDWORK (6 credits)
This course is an eight-week, full-time field placement in an educational setting under the supervision of a state licensed speech-language pathologist. The field placement allows the student to practice the knowledge and skills related to speech and language interventions. Students will have an opportunity to request fieldwork site placements based on their areas of interest, strengths and goals for employment. Prerequisites: SLPA 200, 202, 220 and 230.

SSS 100
STUDENT SUCCESS (1 credit)
Provides a foundation for gaining the knowledge, skills and attitudes necessary for college success. Students will learn to make a successful transition to higher education by setting up a pattern of success that will last the rest of their lives. Students will define goals and develop thinking skills, learning strategies and personal qualities essential to both academic and career success. *Please note: Students who have served active military duty (excluding basic training and AIT) may be exempt from the Student Success course. Student must provide a copy of DD214 or other official military documentation to the registrar for verification.*

SSS 101
ONLINE SEMINAR I (1 credit)
Online Seminar will focus on specific challenges unique to online students as well as ways to address them including tips for improving time management, presentations and test-taking skills. Student will be expected to complete surveys throughout the semester and participate in discussion groups. Instructor input will help identify what courses to take, how to register for classes and help design a graduation plan. This course will be a bi-weekly virtual meeting.

TRAN 100
INDUSTRIAL TRANSPORTATION/CDL (1 credit)
Instruction in commercial transportation. Opportunities are provided for obtaining a Class A commercial drivers license. Arrangements are made for taking the test(s) required by the state. A Class A CDL is a requirement for graduation from several programs. Any student enrolled in this course will be subject to random drug screening as required by the US Department of Transportation. A valid South Dakota driver's license is required in order to complete the CDL training course. For students enrolling in a two-year program, this course must be completed by the end of their first year. This class is offered for credit as a Pass/No Pass course. **Please note: Students are required to show proof of a valid Class A CDL by the end of the 10th day of the semester in which the student is enrolled in order to drop this class.**

WLD 101
WELDING SAFETY AND DISCONTINUITIES (3 credits)
The AWS Safety in Welding provides a comprehensive overview of welding hazards, safety equipment. At the completion of the course, participants will have the opportunity to sit for a certification exam. Students will also be introduced to discontinuities AND defects that go hand in hand with the welding processes. They will be able to correctly place the discontinuity or defect into precise categories.

WMT 120
SYMBOLS AND MEASURING (1 credit)
Exercise the ability of micrometer use, reading of fraction/metric tape measure, applying the use of a fillet weld gauge, operating dial indicators, dial calipers, identifying weld symbols, analyzing welding symbols on weld drawings and demonstrating actual welding scenarios with a comprehensive view of welding manufacturing blueprints.

WMT 121
BLUEPRINT READING (1 credit)
Interpretation of blueprints, creation of weld maps, applying weld symbols to corresponding parts, study of current manufacturing blueprints, draw fabricated parts in detail with weld symbols, formulate math problems into created drawing and research blueprints with unknowns.

WMT 132
METALLURGY (3 credits)
Introduction to metallurgy of carbon steel, aluminum, and stainless steel. Set up and illustrate proper mechanical requirements for welding steel, aluminum with GMAW/GTAW/SMAW processes; create electrical diagrams for specific current needed to weld steel/aluminum; acquire proper meanings for welding terminology; exchange of carbon in steel; allotropy of iron atoms; transformation temperatures; treatment of metals with heat; adhere to the ASTM designation system; summarize the classification of carbon steels and aluminum for proper filler metal selection; and illustrate heat affected zone. Acquaint self with acceptable, unacceptable welds through the interpretation of relevant welding codes.

WMT 142
WELDING ECONOMICS (3 credits)
A close look at welding manufacturing economics with specifics in welding productivity, do's goal, method for computing operation factor, putting it all together and summary of key concepts. Reduce weld metal volume, reduce arc time per weldment, reduce rejects, rework and scrap, reduce work effort, reduce motion and delay time, method for computing operating factor and understanding welding productivity.

WMT 149
BASIC WELDING LAB (2 credits)
Proper skills to operate all shop equipment and produce quality welds in order to pass specific weld position tests. Some of the assignments will include: Lab safety; applying proper technique with GMAW processes; manipulate hand held plasma equipment in a skillful assignment; demonstrate the ability to properly operate an oxy-fuel cutting torch.

WMT 150
WELDING LAB I (4 credits)
Student will gain the proper skills to operate all shop equipment and produce quality welds in order to pass specific weld position tests. Some of the assignments will include: working on a class room project; applying proper technique with GMAW, GTAW and GMAW-P to properly pass an AWS qualification exam.

WMT 151
WELDING LAB II (7 credits)
The student will gain the proper skill to operate all shop equipment and produce quality welds on aluminum and steel in order to pass specific weld position tests. Band saw operations, introduction to the basic operations of a forming Iron Worker, demonstrating proper techniques in various positions with GMAW/GTAW/SMAW/GMAW-P process, and fabrication of a classroom project.

WMT 201	QUALITY AND PRODUCTIVITY IMPROVEMENT (2 credits)	WMT 252	MECHANICAL WORKMANSHIP LAB (2 credits)
Quality and productivity improvement. Will appeal to everyone concerned with enhancing productivity in the Welding workplace. Reviews management systems for welding supervisors, requirements of welds, welding instruction, and application of welding standards, welding inspection, health, safety, work reports, and records.		The first and second year students will be working together to complete a large fabrication project. Example of past years projects would include a 20-foot (16' long with 4' stationary deck) tilt utility trailer. During this lab the students will be taking all of the skills they have developed in the WMT program and applying them to fabricate the final project.	
WMT 230	WELDING ROBOTIC LAB (3 credits)	WMT 260	ADVANCED MACHINING (4 credits)
Introduction to welding robotics. Goal is to help students develop the necessary skills to thrive in an advanced manufacturing environment with the use of Weldpro Fanuc Robot. Education will assure complete part make up from programming to weldment.		Introduction to a CNC Programming on Haas lathe and milling stations. Using proprietary computer aided machining software that makes G coding parts and creating part programs nearly effortless. Through an interactive graphical environment using full-color graphics laptop displays. Operations such as constant Z machining of three dimensional parts, drilling Cann Cycles and rough and finish cut programming to complete finished parts on the CNC milling and lathe stations.	
WMT 231	MANUAL MACHINING LAB (3 credits)	WMT 262	ADVANCED WELDING PROCESSES (4 credits)
Set up and operation of manual machining equipment. Birmingham Mill and Nardini Engine Lathe will be introduced as the machining stations as well as manual operation of CNC equipment. Instructions on, set up, and quality part production will be the key attributes.		Advanced skill learning with various welding process that include gas metal arc, gas tungsten arc, shielded metal arc, and flux core arc. Difficult joint configurations along with various structure and pipe practices.	
WMT 232	WELD TESTING METHODS (NDT/DT) (4 credits)	WMT 271	ADVANCED WELDING ROBOT QUALIFICATION (2 credits)
Discovering code related testing methods and practice of various nondestructive and destructive applications to weldments in order to comply to code testing requirements. Methods include, Die Penetrant, Magnetic, Radiographic and Ultrasound.		Designed to help prepare the student to accomplish an American Welding Society welding robot operator qualification. Various practice assignments will help the student acquire the skill level to accomplish most scenarios in a manufacturing environment.	
WMT 240	MANUFACTURING PROGRAMMING (3 credits)	WMT 272	ADVANCED WELDING QUALIFICATION (2 credits)
Introduction to Solidworks CAD software that helps create files that operate most automated manufacturing equipment. Students will draft and model formed parts and create cut files that will simulate a machine cutting a specified material and drawn part. Students will use these files that are drawn in the fourth semester CNC machining lab.		A student will have the opportunity to sit and test for an American Welding Society qualification exam. Based on previous education and skill a welder will have the time to practice and select a qualifying welding procedure specification and administer an exam.	
WMT 242	WELDING CODE (3 credits)	WMT 281	INTERNSHIP (6 credits)
A welding code clinic designed to fit manufacturing needs in order to create a reputable welding program within a company's requirements. Code interpretation would evaluate code books published from the American Welding Society, American Society of Mechanical Engineers and the American Petroleum Institute.		Employer based student work experience. Student completion of a 240 hour internship. Completion of employer qualification testing if applicable.	
WMT 250	LASER CUTTING TECHNOLOGY (3 credits)	WTT 100	TURBINE SAFETY (1 credit)
Introduction to the basic operations of the most up-to-date automated laser cutting system. The learning objectives will be focused on cutting, engraving, and rastering along with recognizing the ultimate advancement in the human machine interface controller. Education will assure complete part make up from drafting to piece part.		Students are introduced to the correct climbing techniques in accordance with OSHA and standard industry practices. The students will learn the definition of "100% tie off" and understand tower rescue.	
WMT 251	CNC MACHINING STATION LAB (3 credits)	WTT 101	INTRO TO WIND TECHNOLOGY (2 credits)
Introduction to a CNC machining lathe and mill stations. Using proprietary conversational operating systems that make modeling parts and creating part programs nearly effortless. Through an interactive graphical environment -using full-color graphics on liquid crystal displays. Operations such as tool and work offsets using the Renishaw probing system, drilling and tapping, pocket milling, engraving, facing, and boring. Education will assure complete part make up from drafting to piece part.		An overview of major and minor components in the construction of a wind turbine. This includes the function of the bottom control cabinet, top control cabinet and hub control panel or hydraulic system. The different types of generators, gearboxes and gear reduction drives used in yawing the nacelle and pitching of the blades are explained. Students will also study the characteristics of different types of air foils when dealing with blade designs.	

WTT 102
BASIC TURBINE MECHANICS (4 credits)
Students are given an in-depth look at the tools and the types of mechanical systems that are typically encountered on a wind turbine. Students will learn the safe usage of large tools as well as their proper use. They will gain an understanding of documenting gear, shaft and bearing failure concepts as well as what to look for when performing general inspections.

WTT 104
SCHEMATICS (2 credits)
Students will be taught wiring diagram symbols. They will be able to identify both parallel and series circuits; draw pictorial and ladder diagrams; identify abbreviations for common electrical components; and be able to read the legend of a wiring schematic.

WTT 105
DC/AC TURBINE CIRCUITS (3 credits)
Students learn direct current (DC) theory and the fundamentals of series and parallel DC circuits. An introduction to the concept of electricity and its behavior with respect to conductors and resistance devices. Note: Must earn a grade of "C" or higher in order to enroll in subsequent courses.

WTT 108
HYDRAULICS (2 credits)
Students will learn industry relevant skills related to accumulators, DCVs, cylinder types, check valves and remote pressure control. Operation, installation and performance analysis. Also introduces electro-fluid concepts and applications. Prerequisite: WTT 107.

WTT 112
ELECTRONICS I (4 credits)
The study of alternating current (AC) circuits begins with the generation of a sine wave and review of trigonometric functions and continues through resonance and filter circuits. In-depth look at inductors and capacitors and how they affect an AC and DC circuit differently. Introduction to the components of electronics, both passive and active. Subjects studied include power supplies, solid state components, frequency, resistance, capacitance, modulation, wave theory, testing devices and electronic systems as they are used in the control of a wind turbine. Prerequisite: WTT 105. Must earn a grade of C or higher in order to enroll in subsequent courses.

WTT 120
INDUSTRIAL MOTOR CONTROLS (4 credits)
Fundamentals of motor controls, including start stop stations, time delay circuits, sequence starting, synchronized starting, auto starting via pressure switch, etc. are taught. Students will use the knowledge they obtain to efficiently negotiate the different control devices as well as implement the information received from schematic reading. Prerequisite: Must earn a grade of C or higher in order to enroll in subsequent courses. WTT 105.

WTT 130
FIELD TRAINING I (0.5 credit)
The student will learn to correctly identify and inspect the necessary lanyards, hardware and harnesses used in tower work and complete a job safety analysis worksheet prior to climbing. The student will then properly put on the climb safety harness and perform a safe tower climb on the ladder in the ETC lab.

WTT 131
FIELD TRAINING II (0.5 credit)
The student will learn how to properly perform a tower rescue of a mannequin who is suspended from the lab ladder with a ladsafe and harness. The student will learn how to use a tractel lifting device to safely lift the mannequin from his connection to the tower and correctly lower the mannequin to the ground. The student will also climb the 300-foot GE tower at Crow Lake and gain an understanding of the requirements of climbing to that height.

WTT 213
ELECTRONICS II (4 credits)
Students learn the theory of power supplies in this introduction to the components of electronics, both passive and active. Subjects studied include power supplies, solid state components, frequency, resistance, capacitance, modulation, wave theory, testing devices and electronic systems as they are used in the control of a wind turbine. Prerequisites: WTT 105 and WTT 112. Must earn a grade of C or higher in order to enroll in subsequent courses.

WTT 214
THEORY OF POWER GENERATION (4 credits)
The theory of generators and typical uses. Students will gain an understanding of generator construction and the operational theories which can be applied toward generator troubleshooting. Construction, function and logic of power regulators and power converters is discussed. Prerequisites: WTT 213, WTT 215.

WTT 217
INTRODUCTION TO PLCs (3 credits)
Applications of control devices are reviewed. Photoelectric controls, logic modules, sequential motor starting, troubleshooting, acceleration and deceleration methods are studied. Prerequisites: WTT 105, WTT 112, WTT 120.

WTT 220
COMPOSITES (4 credits)
Students learn about composite materials and the different manufacturing processes of composite components. Students learn the basics of the materials and resins used in the components and how they work together to make a high strength, lightweight, corrosion-resistant and durable product. Materials used in the manufacturing of wind blades will be used and students will gain an understanding of repairing a wind turbine blade. A Certified Composites Technician Certificate will be issued to those completing the course and passing the American Composites Manufacturing Association's tests with endorsements in Vacuum Infusion Process Manufacturing and Wind Blade Repair.

WTT 225
UTILITY SAFETY (2 credits)
Specific OSHA, APPA and NESC rules that apply to operating and maintaining wind turbines. Must earn a grade of C or higher.

WTT 230
FIELD TRAINING III (0.5 credit)
The student will perform climbs on the 300-foot GE tower at Crow Lake and perform a hub entry. The student will perform a mannequin rescue inside the tower and satisfactorily remove the mannequin to the area outside the tower.

WTT 231
FIELD TRAINING IV (0.5 credit)
The student will continue in climbs on the 300-foot GE tower and perform checks on the system. The student will continue to gain confidence in climbing and performing rescues.

WTT 240
SCADA CONCEPTS (2 credits)
Students are introduced to the fundamentals of supervisory controls and data acquisition (SCADA) as those concepts relate to the operation of wind turbines and the generation and transmission of power. Prerequisites: WTT 213, WTT 215.

Faculty

(Year of Appointment in Parentheses)

ALBERTZ, KELVIN (2000)

Information Systems Technology
A.A.S., Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

APPLETOFT, DONNA, CMA, CPC (2011)

Health Sciences
A.A.S., Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

BENJAMIN, MICHAEL (2007)

Telecommunications
B.S., University of Management and Technology

BRAUN, TODD (2010)

Electrical Construction and Maintenance
A.A.S., Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

BRTNA, JOE (2012)

Diesel Power Technology
Diploma, Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

BUHLER, CAREY C., M.D. (2000)

Medical Director, Radiologic Technology
B.S., University of South Dakota
M.D., University of South Dakota
Residency, Pediatric Radiology, Boston Children's Hospital
Residency, Radiologic Pathology, Armed Forces Institute of Pathology

CAREY, BLAINE (2017)

SD Center for Farm/Ranch Management
B.S., South Dakota State University

CARPENTIER, MIKE (2017)

Commercial Truck Driving (CDL)
Diploma, Mitchell Technical Institute

DEGEN, CHRIS (2013)

Power Sports Technology
Diploma, Minnesota West
Undergraduate Studies: Dakota Wesleyan University

EHLKE, JERRY (2012)

Electrical Utilities and Substation Technology
Diploma, Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

ELLIS, SARAH (2017)

General Education (Communications)
M.S., South Dakota State University
B.S., South Dakota State University
A.A., Dakota State University

FENSKI, DEZARAE, BSN, RN (2017)

Licensed Practical Nursing (LPN)
B.S.N., South Dakota State University

FLYNN, DEBORAH, MA, CCC-SLP (2010)

Speech-Language Pathology Assistant
M.A., University of South Dakota
B.S., South Dakota State University

FREEMAN, PAULA, RT (R), (T) (2005)

Radiation Therapy
Certificate, University of Minnesota School of Radiation Therapy
Certificate, Sioux Valley School of Radiologic Technology
Undergraduate Studies: South Dakota State University

FREY, SHAWN (2010)

Culinary Academy of South Dakota
A.A.S., Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

FUERST, DOUGLAS (1998)

Electrical Construction and Maintenance
A.A.S., Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

GARTON, DAVID JR. (1978)

Accounting/Business Management
Diploma, Mitchell Technical Institute
Undergraduate Studies: South Dakota State University

GIBLIN, DEBRA (2002)

Administrative Office Specialist
M.A., University of South Dakota
B.S., University of South Dakota

GOLDAMMER, TIM (2017)

Culinary Academy of South Dakota
B.S., South Dakota State University

GRABER, MICHELLE (2013)

General Education (Communications)
M.A., Minnesota State University, Mankota
B.A., University of Sioux Falls
A.A.S., Southeast Technical Institute

GROSS, JULIE (2011)

General Education (Communications)
M.A., University of South Dakota
B.A., University of Sioux Falls

GUERICKE, JANELLE (2012)

Agricultural Business
B.A., Dakota Wesleyan University

GUINDON, RAYNE (2015)

Power Sports Technology
 Diploma, M-State Detroit Lakes
 Undergraduate Studies: Dakota Wesleyan University

HART SCHUTTE, JULIE (2015)

Human Services Technician
 M.S., South Dakota State University
 B.A., Dakota Wesleyan University

HENKEL, JOHN (2013)

Electrical Construction and Maintenance
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

HERLL, DIXIE (2015)

Human Services Technology
 B.A., Dakota Wesleyan University

HERRMANN, LISA, M. Ed., RT (R), (T) (2006)

Radiologic Technology
 M.Ed., South Dakota State University
 B.H.S., Washburn University
 Certificate, Sioux Valley School of Radiologic Technology

JARDING, CARENA, DPN, RN (2016)

LPN Nursing
 D.N.P., American Sentinel University
 M.S.N., Grand Canyon University
 B.S.N., South Dakota State University
 A.A., Dakota Wesleyan University

JOHNSON, LISA, LPN (2013)

Medical Assistant
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

JUHNKE, JASON (2010)

Heating and Cooling Technology
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

KOCK, GREGORY (2015)

ButlerEDGE
 A.A.S., Lake Area Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

KRANZ, JOSH (2012)

Culinary Academy
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

KRIESE, RICK (2011)

Agronomy
 A.A.S., Lake Area Technical Institute
 Undergraduate Studies: South Dakota State University

LEISETH, DIRK (2017)

Natural Gas Technology
 A.A.S., Mitchell Technical Institute
 A.S., Eastern Wyoming College

LORENZEN, KIM, M.D./PATHOLOGIST (1988)

Medical Advisor, Medical Laboratory Technology
 B.S., University of South Dakota
 M.D., University of South Dakota School of Medicine
 Residency, Pathology, University of Nebraska
 Fellowship, Forensic Pathology, Southwestern Institute of
 Forensic Sciences, Dallas, TX

MAHONEY, JIM (2004)

Architectural Design and Building Construction
 B.S., Dakota State University

MAREK, KASSIE, BSN, RN (2017)

Licensed Practical Nursing (LPN)
 B.S.N., Dakota Wesleyan University
 A.S., Dakota Wesleyan University

MARGALLO II, LUCIO, M.D., F.A.C.I.P. (1999)

Medical Director, Medical Assistant
 Pre-Med, University of St. Thomas, Manila, Philippines
 M.D., University of St. Thomas, Manila, Philippines
 Residency, General and Surgical Medicine, Iriga City,
 Philippines; Clinical Assistant Professor, University of
 South Dakota; Assistant Professor, University of St.
 Anthony, Iriga City, Philippines

MCENTEE, LINDA (1992)

General Education (Computers)
 M.S., University of South Dakota
 B.A., Augustana College

MOKE, DALE (2012)

Industrial Controls
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

MULLOY, SHANE (2017)

Power Line Construction & Maintenance
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

MUNSEN, MARK (1997)

Architectural Design and Building Construction
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

MUNSEN, TAMARA (2002)

Engineering Division (Computers)
 M.S., Dakota State University
 B.A., Dakota Wesleyan University

NICOLAUS, JANET (1986)

Accounting/Business Management
 M.A., Northern State University
 B.A., University of South Dakota
 A.A., South Dakota State University

OSBORNE, TOM (2009)

Power Line Construction and Maintenance
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

PETERSON, TRAVIS (2012)

Welding and Manufacturing Technology
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

PRITCHARD, SUSAN, MBA, RT(R)(CT) (2014)

Radiologic Technology
 M.B.A., Colorado Technical University
 B.S., Mount Marty College
 Certificate, Sanford Medical Center School of Radiologic Technology

PUETZ, MICHAEL (1998)

Power Line Construction and Maintenance
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

RAAK, NATHANIEL (2014)

General Education (Mathematics)
 M.A., University of South Dakota
 B.A., Northwestern College

RASSEL, JOEL (2015)

Diesel Power Technology
 Certificate, Allied Business
 Undergraduate Studies: Dakota Wesleyan University

REIMNITZ, TRAVIS (2017)

Professional Truck Driving
 B.S., Black Hills State University
 A.A., Grace University

RENKEN, JOSH (2013)

Automation Controls/SCADA
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

REPENNING, LORI, DVM (2012)

Animal Science
 D.V.M., Kansas State University
 B.S., University of Nebraska

ROBERTS, BRIAN (2014)

Wind Turbine Technology
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

RUSSELL, ANNIKA (2008)

Accounting/Business Management
 M.A., University of Nebraska-Lincoln
 B.A., Dakota Wesleyan University

RUSSELL, DEVON (2014)

Precision Technology Specialist
 B.S., South Dakota State University

SCHAFFER, ERIC, MSRT(R), (CT) (2000)

Radiologic Technology
 M.S., University of South Dakota
 B.S., University of South Dakota

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Medical Office Professional
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

SCHNEIDER, BETH (2015)

Commercial Driving
 M.A., University of South Dakota
 B.A., Chadron State College

SCHOENFELDER, JED (2017)

Welding & Manufacturing Technology
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Architectural Design & Building Construction
 B.S., South Dakota State University

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South Dakota Leadership Academy
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 Graduate Studies: Dakota Wesleyan University

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Speech-Language Pathology Assistant
 M.A., University of Iowa
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Information Systems Technology
 A.A.S., Mitchell Technical Institute
 Undergraduate Studies: South Dakota State University

SMITH, LYNNE, M.Ed., MT(ASCP) (2002)

Medical Laboratory Technology
 M.Ed., South Dakota State University
 B.S., South Dakota State University

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General Education (Math)
 M.Ed., Northern State University
 B.A., Northern State University

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Welding and Manufacturing Technology
 A.A.S., Community College of the Air Force
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SD Center for Farm/Ranch Management
 B.S., South Dakota State University

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Power Line Construction and Maintenance
 Diploma, Mitchell Technical Institute
 Undergraduate Studies: Dakota Wesleyan University

VERSTEEG, DAVID (1985)

Telecommunications

B.A., University of Sioux Falls

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WALTER, WILL (2011)

SD Center for Farm/Ranch Business Management

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Advanced Medical Imaging

B.S., Florida Hospital College of Health Sciences

Certificate, Sioux Valley Hospital of Radiologic Technology

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Ag and Transportation Technologies

A.A.S., Mitchell Technical Institute

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