



**ANOKA**  
**TECHNICAL COLLEGE**

A member of Minnesota State

**Academic Catalog**

**2021-2022**

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Anoka Technical College (ATC) has made every effort to ensure the accuracy of the material contained within this catalog as of the publication date. Anoka Technical College reserves the right to make changes to the content of this catalog and other college publications, policies, procedures, program information, fees, calendars, bulletins, or announcements without notice. Revisions to information contained in this publication will be posted to the official College Web site at: [AnokaTech.edu/](http://AnokaTech.edu/).

Each student is responsible for being familiar with the information appearing in this catalog and the Student Planner. Failure to read the regulations will not be considered an excuse for noncompliance. Anoka Technical College acknowledges its legal and moral responsibility to ensure equal employment and educational opportunities with no discrimination regarding race, sex, color, creed, religion, age, national origin, disability, marital status, status with regard to public assistance, sexual orientation, membership or activity in a local commission as defined by law. The College is in compliance with Title IX and Section 504 and will continue its affirmative action commitment to removing barriers to equal employment and educational opportunity.

This information is available on the Web for those needing to access it in alternative format.

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01/2020



# Important Numbers & Academic Calendar

## College Telephone Directory

General Information	763-433-1100
Enrollment Services	763-576-7710
Adult Basic Education	763-576-7840
Bookstore	763-576-7750
Business Office	763-576-7720
Counseling	763-576-4036
Office of Accessibility	763-576-7950
Financial Aid	763-576-7730
Job Placement Services	763-576-7780
Library	763-576-7850
Placement Testing (Accuplacer)	763-576-7830
Professional & Workforce Training	763-433-1200
Records & Registration Office	763-576-7740
Student Senate	763-576-7890
Veterans Educational Benefits	763-576-7740



**In case of emergency call, 911 immediately, then call the Security Office at 612-819-4585 and advise them that 911 has been called and for what reason.**

## Academic Calendar

### Fall Semester 2021

First Day of Fall Semester	Monday, Aug. 23
Holiday Observed, College Closed, No Classes	Monday, Sept. 6
No Classes	Thursday, Oct. 21 to Friday, Oct. 22
Holiday Observed, College Closed, No Classes	Thursday, Nov. 11
Holiday Observed, College Closed, No Classes	Thursday, Nov. 25 to Saturday, Nov. 27
Commencement Ceremony	Thursday, Dec. 16
Last Day of Fall Semester	Friday, Dec. 17

### Spring Semester 2021

First Day of Spring Semester	Monday, Jan. 10
Holiday Observed, College Closed, No Classes	Monday, Jan. 17
No Classes	Friday, Feb. 11
Holiday Observed, College Closed, No Classes	Monday, Feb. 21
Spring Break, No Classes	Monday, March 14 to Saturday, March 19
No Classes	Friday, April 15
Commencement Ceremony	Thursday, May 12
Last Day of Spring Semester	Friday, May 13

### Summer Semester 2021

First Day of Summer Session	Tuesday, May 31
Holiday Observed, College Closed, No Classes	Monday, July 4
Last Day of Summer Session	Friday, July 1

## President's Greeting



### Welcome to Anoka Technical College & our Academic Catalog!

Welcome to Anoka Technical College!

We are thrilled you have committed to pursuing your education and furthering your career at Anoka Technical College. Now is the time to discover what our college has to offer you!

Anoka Technical College has provided technical training and education for more than 50 years. In joining the Anoka Technical College community, you are taking an important step in advancing your future. A college education is a valuable investment, expanding career opportunities and the potential to achieve your personal and professional goals. At Anoka Technical College, we have a strong team of faculty and staff to support your journey here and help you to be successful. As you'll see in this catalog, Anoka Technical College offers degrees, diplomas, and certificates across a diverse set of career fields to meet your needs. We are proud of the reputation of our programs, and we strive to stay on the leading edge of technical education. Students at Anoka Technical College have the opportunity to learn in-demand skills from faculty who are experts in their fields and who have strong relationships with industry and local employers. Our modern labs and classroom spaces feature state-of-the-art equipment, ensuring that our graduates are job-ready.

Our Strategic Plan guides all we do at Anoka Technical College and reinforces our commitment to student success. Our faculty and staff are dedicated to promoting an inclusive environment that is welcoming and equitable for all. As a student, you can set yourself up for success by actively engaging with staff and connecting with faculty in your classrooms. I also encourage you to explore student life and development opportunities at the college to meet other students and to engage more deeply with your career goals.

Welcome and thank you for choosing Anoka Technical College. We congratulate you for taking action on your future, discovering what our college has to offer, and becoming a student today.

Sincerely,

A handwritten signature in black ink that reads "Kent Hanson". The signature is written in a cursive, flowing style.

Kent Hanson, Ph.D.  
President  
Anoka Technical College and Anoka-Ramsey Community College

# Introduction

## About Anoka Technical College

Founded in 1967, Anoka Technical College is a member of Minnesota State and offers more than 35 career programs leading to occupational careers. For more information, visit [AnokaTech.edu](http://AnokaTech.edu).

## College Mission, Vision and Goals

**Mission:** Provide innovative career and technical education to help our students and communities live and learn well.

**Vision:** A vital student-and community-focused institution, providing the finest career and technical education in Minnesota.

The following are goals of Anoka Technical College:

- Commit to student success
- Promote academic excellence
- Foster a vibrant, sustainable organization
- Establish a strong identity and reputation for excellence
- Strengthen and extend meaningful partnerships

## Core College Competencies

The Assessment Committee at Anoka Technical College has identified the following three core college competencies to be included and formally assessed in every certificate, diploma, and AAS degree. All students graduating will be able to:

- Communicate effectively
- Problem Solve
- Interact in complex, dynamic environments

A more detailed explanation of each competency follows:

1. **Communicate Effectively**  
Effective communication involves writing, speaking, or communicating using language appropriate to the audience, technology, and purpose. Effective communication also includes receiving information/listening actively with understanding, demonstrating college-level reading comprehension, and writing in standard English.
2. **Problem Solve**  
Problem solving involves recognizing, analyzing, and defining problems, drawing logical well-supported conclusions, and testing them against relevant criteria and standards. Problem solving also includes examining issues by identifying and challenging assumptions (including one's own), developing alternative solutions or strategies, and evaluating practical and ethical implications.
3. **Interact in Complex, Dynamic Environments**  
Interacting in complex, dynamic environments involves collaborating and interacting effectively with others and identifying individual and group roles. It also includes recognizing social responsibilities, ethics, and individual rights in society. Another element is recognizing social diversity, including contributions, traditions, cultures, lifestyles, and/or values of others.

## Fast Facts

- **Largest programs:** Construction Electrician, Information Technology, Nursing Assistant, Practical Nursing, and Welding
- **Unique programs:** Broadcast Captioning, Judicial Reporting, Occupational Therapy Assistant, Surgical Technology, and online Legal Assistant programs
- Accredited by the Higher Learning Commission

## Location

Anoka Technical College is located in the historic river city of Anoka, MN, on 29.3 acres along U.S. Highway 10, about two miles northwest of downtown Anoka. The one-story, 295,000 square-foot main building is a former manufacturing facility built in multiple stages in the 1950s and purchased and renovated for vocational/technical education between 1965 and 1969. The building received a major renewal upgrade in 2002 that addressed long-standing building improvement needs. The campus is highly visible due to its location along a major Twin Cities commuter highway (Highway 10) and light rail line (Northstar Corridor).

## 2021 Student Profile

- 87% of our first year full-time students receive some form of financial aid or scholarship
- 36% receive a Pell Grant
- 46% of our students are male and 54% are female
- 48% of our students are full-time and 52% of our students are part-time
- Fall to fall retention rate is 60% (full-time students)
- Overall graduation rate is 46% (full-time students)
- Overall graduation rate for males is 48% (full-time students)
- Overall graduation rate for females is 35% (full-time students)
- Overall transfer rate is 13%
- Ethnic diversity is:
  - 70% White
  - 11% Black or African American
  - 5% Hispanic/Latino
  - 5% Asian
  - 5% Two or more races
  - 1% American Indian or Alaskan Native
  - 0% Native Hawaiian or Pacific Islander
  - 0% Nonresident Alien
  - 86.4% of career technical program graduates were employed

Sources: *IPEDS College Data 2020-2021 Enrollment Data Statistics / Minnesota State Colleges and Universities*

## Accreditation

Anoka Technical College is accredited by the Higher Learning Commission. The college was granted initial accreditation in 1999, and its most recent accreditation was granted in 2014. The College is due for reaccreditation in 2024. Higher Learning Commission, 230 S. LaSalle St, Ste 7-500, Chicago, IL 60604, 800-621-7440

All programs offered at Anoka Technical College are approved by the Minnesota State Colleges and Universities system, the Minnesota Division of Rehabilitation Services, and the state-approving agency of



[AnokaTech.edu](http://AnokaTech.edu)

Veterans Education. In addition, the following programs are accredited by outside accrediting organizations: Automotive Technology (National Institute for Automotive Service Excellence (ASE) Education Foundation); Concurrent Enrollment Program (NACEP); Health Information Technology (Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)); Medical Assistant (Commission on Accreditation of Allied Health Education Programs (CAAHEP)); Occupational Therapy Assistant (Accreditation Council for Occupational Therapy Education (ACOTE)); Practical Nursing (Minnesota Board of Nursing); and Surgical Technology (Commission on Accreditation of Allied Health Programs (CAAHEP)).

Other programs within the colleges are certified, licensed or approved by outside agencies, but do not use the term accreditation. Those programs are Construction Electrician (State of Minnesota Department of Labor and Industry), Emergency Medical Services (State of Minnesota Emergency Medical Services Regulatory Board), and Judicial Reporting (National Court Reporters Association (NCRA)).

### Equal Opportunity Institution

Anoka Technical College acknowledges its legal and moral responsibility to ensure equal employment and educational opportunities with no discrimination regarding race, creed, disability, color, religion, national origin, sex, sexual orientation, age, marital status, or inclusion in any group or class protected by state or federal law.

Anoka Technical College is committed to compliance with Title IX, Section 504, the Americans with Disabilities Act, and all state statutes and regulations relating to removing barriers to equal employment and educational opportunity.

Anoka Technical College is a member of a college community that is committed to creating a positive, supportive environment and welcomes a diversity of opinions and ideas for students, faculty and staff of all cultures. The college will not tolerate racism, harassment, or any derogatory remarks about a student's race, sexual orientation, religion, class, gender or physical limitations. Anoka Technical College believes the best and most effective learning environment for tomorrow's leaders is in a multicultural environment.

This catalog is also available in alternate formats. Contact the Office of Accessibility at 763-576-4069.

### Admissions

#### Admission Policy

Anoka Technical College follows an open-door admissions policy, which means that any resident who graduated from an accredited high school, successfully completed a General Educational Development (GED) examination, or demonstrated an Ability to Benefit by taking a placement test is eligible for college admission. In addition, current high school students who meet the requirements for the Postsecondary Enrollment Options (PSEO) program are eligible for college admission. Admission to the college does not automatically qualify a student for all courses and programs at the college. Some courses have special prerequisites and requirements and certain programs require an additional admission process.

The full Admissions Policy can be found at [www.anokatech.edu](http://www.anokatech.edu) under Policies and Procedures.

#### Immunization Policy

All students who are registered for more than one class must provide proof of current immunization by the 45th day of the semester to register for the next semester. However, students who were born in 1956 or earlier are exempt but should complete the online immunization form documenting this exemption. Students who graduated from a Minnesota high school in the last 10 years who have met the requirements are also exempt. All students entering a health occupation program that requires an off-campus clinical experience are required to provide acceptable proof of required immunizations.

#### Transfer Credit Policy

A student wishing to transfer credits into Anoka Technical College must complete the admissions process, be accepted into a program of study, and have official transcript(s) from previous college(s) sent directly to Anoka Technical College's Records Office. Anoka Technical College is able to pull transcripts from other Minnesota State institutions once a student has been accepted, so students do not need to request official transcripts from other institutions within Minnesota State.

All other transcripts must be official, which means that the transcript must be received by Anoka Technical College in a sealed envelope or by an electronic means directly from the other school. If delivered in person, a transcript must be delivered unopened with the official seal intact. Student copies and faxed transcripts are not considered official.

The evaluation will be completed according to Minnesota State Board Policies and Procedures and will involve the following three conditions:

1. Educational quality of the learning experience which the student transfers,
2. Comparability of the nature, content, and level of the learning experience offered by the receiving college, and
3. Appropriateness and applicability of the learning experience to the programs offered by the receiving higher education entity in light of the student's educational goals

#### General Transfer Policies

Only those courses that are applicable to a student's certificate, diploma or degree will be considered for transfer. Anoka Technical College will accept in transfer courses that it determines to be comparable or equivalent to specific courses it offers.

#### Technical College Credits

Transfer of technical credits will be considered for courses that have been completed within five years prior to application for admission to Anoka Technical College. Students with technical courses which were completed more than five years prior to application should consult with program faculty for options for applicability.

#### Transfer of Minnesota Transfer Curriculum (MnTC) and Other Courses

Anoka Technical College will accept all MnTC courses and goal areas as defined by the sending institution. However, there is no guarantee that courses from private and non-Minnesota State institutions will satisfy MnTC courses or goals; such courses are evaluated on an individual basis.

Anoka Technical College will accept courses from other institutions with grades of "D" or higher. While the college will accept grades of "D," individual departments (due to varying departmental policies regarding acceptable grades for graduation) may not accept them.



## Transfer Resources

- Transferology
- Anoka Technical College Articulation Agreements
- Minnesota Transfer website
- Minnesota State CAREERwise

## Appealing the Transfer Evaluation

If a student is not satisfied with a decision regarding transfer of credit, the student may petition using the Transfer Credit Appeal form. Program faculty and the Academic Dean review the appeal. If a student is not satisfied with the transfer appeal decision, the student may appeal the decision at the system level to the Minnesota State Senior Vice Chancellor of Academic and Student Affairs. The decision of the Senior Vice Chancellor is final.

## Credit for Prior Learning (CPL)

Credit for Prior Learning is a process in which students get academic credit for learning they have gained in non-credit or experiential settings. Credit for prior learning (CPL) shall be granted according to the standards and equivalencies of the American Council on Education or the equivalent.

There is a cost per credit. Anoka Technical College adheres to Minnesota State policies and procedures on CPL. Interested students should contact the Records Office o at 763-576-7740 or visit the college website at AnokaTech.edu and search for “Credit for Prior Learning.”

Anoka Technical College may accept the following as credit for prior learning:

- Advanced Placement (AP)
- Articulated College Credit (formerly Tech Prep)
- College Level Examination Program (CLEP)
- Credit by Examination
- Military Education Experience
- Prior Learning Assessment

## Records & Registration

### Registration

Students are responsible for timely and accurate registration after consultation with their program advisor. Students are responsible for tuition and fees for all registered courses. Students who do not plan to attend Anoka Technical College must withdraw from or drop courses through their online eServices account or in writing at the Records Office. Failure to attend class does not in itself constitute dropping or withdrawing. Students who do not attend class and do not drop or withdraw will receive the grade earned. Instructors cannot drop or withdraw students from courses. The college reserves the right to drop a student from a course without student permission and will notify the student. Reasons why the college would drop a student include, but are not limited to, students who did not meet the prerequisites for a course, students who registered before being suspended from the college, course cancellations, and students not making payment arrangements by the published deadline

### Non-Degree Seeking/Visiting Students

This option is designed for students who are not seeking a certificate, diploma, or degree, do not want financial aid (loans, grants and work-study); and want to take less than nine credits. Students should Students interested in attending the College under the Non-Degree Seeking/Visiting status should select the “Complete courses and transfer without a degree” or “complete courses not a degree” option when applying to the college. Non-Degree Seeking/Visiting students

are also required to submit an Immunization Record form, available on the College website) to the Records Office.

### Change from Non-Degree Seeking to Admitted Status

To change from a non-degree seeking/visiting student to a degree-seeking student, students should complete the steps for general student admission that are outlined on the college website (AnokaTech.edu). Contact Enrollment Services at EnrollmentServices@anokat-ech.edu for additional information.

### Senior Citizen Registration Policy

Minnesota resident senior citizens, 62 years of age or older, may enroll in credit courses on a space-available basis without payment of tuition and activity fees. Senior citizens are required to pay an administration fee of \$20 per credit plus fees. Registration for Minnesota resident senior citizens, at the reduced cost, begins the first business day after the first class session by contacting the Records Office.

There shall be no administrative fee charged to a senior citizen auditing a course. The request to audit a course must be made at the time of registration for the course. Registration for senior citizens who seek to audit a course begins the first business day after the first class session by contacting the Records Office.

### Change of Registration (adding and dropping courses)

Students may add or drop courses online through their eServices account through the first five business days of the semester. This five day period is called the “Add/Drop period” when students are able to drop classes with a full refund and have the course removed from the transcript. For classes beginning after the first week of the semester, students have one (1) business day after the start of the class to add or drop individual classes

### Called to Active Duty Withdrawal Policy

Minnesota State Procedure 5.12.1 provides guidance for students who are members of any branch of the U.S. military and who are unable to complete a semester due to being called to active duty. These students must, to the extent possible, be provided with one of the following options after providing a copy of the call-up papers:

1. The student may withdraw from one or more courses for which tuition and fees have been paid and be given a full refund of tuition and fees. The student may either receive a retroactive drop from the course(s) or “W” grade(s) with an approved tuition waiver and Military Withdrawal annotation on the student’s record, whichever is deemed in the student’s best interest. A student receiving financial aid who chooses this option must be informed that they may be liable for any required refunds of state or federal financial aid funds.
2. The student may be given a grade of incomplete in a course and complete it upon release from active duty.
3. The student may continue and complete the course for full credit. Class sessions missed by the student due to performance of active military service must be counted as excused absences and cannot be used to adversely impact the student’s grade or standing in the class. A passing grade must be awarded if, in the opinion of the faculty member teaching the course, the student has completed sufficient work and has demonstrated sufficient progress toward meeting course requirements to justify the grade.

Additionally, it is strongly recommended for financial aid recipients to check with the [Financial Aid Office](#).



AnokaTech.edu

## Grades

Grades will be available through eServices approximately five (5) days after the last day of the semester. Students may obtain and print an unofficial transcript through eServices under "Academic Records."

## Official Transcripts

The transcript serves as the official record of student effort while enrolled at the college. All financial obligations to the college must be met before transcripts are released. Official transcripts can be requested through the following methods:

- **Online-** You can order electronic transcripts online at [www.getmy-transcript.com](http://www.getmy-transcript.com). This is the fastest and least expensive method when you request that it be sent electronically to the recipient.\*
- **Paper Form-** You can complete the Transcript Request Form located on the college website and return it via mail or in person to the Records Office. Colleges and universities within the Minnesota State system can access your official transcript free of charge, as long as there are no financial holds on your account. There is no need to submit a transcript request form.

## Tuition & Fees

Tuition and fees for each term are based upon the number of credits a student enrolls. Tuition and fees are set by the Board of Trustees of the Minnesota State system and are subject to change without notice. Some courses or academic programs have differential tuition rates due to the increased cost of offering courses or academic programs. Visit <http://anokatech.edu/BecomeStudent/TuitionFees.aspx> for up-to-date tuition and fee rates.

### Fees included with Tuition

The following fees are set annually and may be found on the college website. The following fees are charged on a per-credit basis and included in the tuition/fee rate:

- Minnesota State College Student Association fee: \$.35
- Parking/Access fee: \$5.25
- Student Association fee: \$3.55
- Technology fee: \$10.00

### Other Fees

- Non-sufficient fund (NSF) fee: \$25
- Late fee (maximum per semester): \$50
- Payment plan fee (maximum per semester): \$24
- Placement (Accuplacer) retest fee: \$10
- Prior Learning Assessment: \$75 per credit
- Transcript: \$7.50
- Student ID Replacement Card fee: \$5
- Duplicate Diploma: \$10

### Drop for Non-Payment Policy

Tuition and fees are due 15 business days prior to the start of the semester. Check the college website for tuition due dates. Students who have not made arrangements by this date may have their registration cancelled and be denied entrance to class. To avoid having your registration cancelled, one of the following approved financial arrangements must be in place:

- Tuition and fees paid in full. You may pay online through your eServices account.
- Enrollment in the Nelnet Tuition Management Payment Plan before the payment due date and the required down payment submitted

- through the payment plan. This must be completed each semester
- Financial aid in place, meaning the FAFSA (Free Application for Federal Student Aid) has been received by Anoka Technical College. Note: Students must submit the FAFSA within 30 days of the beginning of the semester to qualify for a state grant.
- The Business Office has received third party or other agency support authorization greater than or equal to the minimum down payment required.
- The Business Office has received a scholarship check or scholarship notice greater than or equal to the minimum down payment required.
- Post-Secondary Enrollment Option (PSEO) enrollment form has been received by the Records Office. This must be completed each semester.
- Veterans using educational benefits have had the benefits certified by the Veteran Certifying Officer at the college. Veterans must submit course schedule to the certifying official each semester.
- Minimum down payment of 15% of total due or \$300, whichever is smaller.

Note: Students are financially obligated for every class in which they register. When students register, they will see a message about their registration cancellation status. While Anoka Technical College does participate in the registration cancellation process, several factors can prevent this from happening. Students who do not plan to attend registered classes must drop their courses online through their eServices account or complete a drop form in person at the Records Office.

### Tuition Refund Policy

Full refunds will be given for any course cancelled by the college. In addition, for courses that start the first week of the semester, a student may drop these courses through the first five (5) business days of the semester to receive a tuition adjustment. For courses that do not start the first week of the semester, a student must drop the course by the end of the second business day after the course start date to receive a tuition adjustment.

For courses that start the first week of the semester, students are obligated to pay for any classes from which they withdraw after the fifth business day of the term. For courses that do not start the first week of the semester, students are obligated to pay for any classes from which they withdraw after the second business day after the course start date. For purposes of this policy, business days are defined as Monday through Friday (excluding posted holidays).

To receive a partial refund of tuition and fees, students must withdraw from all courses after the drop period but within the withdrawal period. Students should first speak with their academic advisor, an Enrollment and Success Coach, and the Financial Aid Office to learn about the academic and financial consequences before making this decision. Students withdraw from courses online through eServices or by completing an Add/Drop/Withdraw form available on the college website or from the Records Office. If a total withdrawal is not completed within the partial refund period, tuition and fees will be owed. See the college website for the refund schedule.

If you register for classes (even if you do not attend the classes) and you do not formally drop or withdraw from the classes, you are responsible for the full tuition and fees due on the tuition due date. Visit [AnokaTech.edu](http://AnokaTech.edu)



AnokaTech.edu

## Exception to Policy

Students have 60 days after the end of the semester to petition for a retroactive course drop or withdrawal. This form will be reviewed by the Exception to Policy Committee. Students should include a written statement describing the circumstances and reasons for their appeal and any required documentation.

All petitions must be signed by the student, legal guardian, power of attorney or executor (in case of death). Documentation may be required if the petition is from someone other than student. Students should complete the Exception to Policy Form located on the college website and include a written statement describing the circumstances and reasons for their appeal and attach supporting documentation.

## Financial Aid

### Availability of Financial Aid

Financial aid is available for full and part-time students. To be eligible for financial aid, students must be accepted into a program that is financial aid eligible, is at least 16 credits in length, and is leading to an Associate of Applied Science (AAS) degree, diploma or certificate. There are both state and federal regulations related to financial aid, and these regulations are subject to change.

If you have been arrested, charged, or convicted of any criminal offense, you should investigate the impact that the arrest, charge, or conviction may have on your chances of employment in the field you are intending to study or on your chances to obtain federal, state and other higher education financial aid.

### Financial Aid Programs

Anoka Technical College participates in federal and state grant, loan, and work-study programs. Unless otherwise indicated, eligibility for aid programs is based on the following:

- An undergraduate student who does NOT have a bachelor's degree
- A U.S. citizen or eligible non-citizen
- Earned a high school diploma or GED
- Admitted to the college as degree-seeking student enrolled in an eligible program
- Eligible programs must be at least 16 credits in length and leads to an Associate of Applied Science (AAS) degree, certificate or diploma
- If male, be registered with the Selective Service Administration
- Maintaining Satisfactory Academic Progress (SAP) as defined in the college's *Satisfactory Academic Progress Policy* which can be found in another section of the *Student Handbook*.
- Not in default on a federal student loan or owe an overpayment on a federal grant
- Must not have been convicted of a drug offense while receiving federal aid
- Students will be considered for all financial aid programs in which they are eligible to receive which may include:
  - Federal Pell Grant
  - Federal Supplemental Educational Opportunity Grant (SEOG)
  - Minnesota State Grant
  - Minnesota Child Care Grant
  - Minnesota GI Bill
  - Minnesota SELF (Student Educational Load Fund) Loan
  - American Indian Scholarships
    - o Federal Bureau of Indian Affairs
    - o Minnesota Indian Scholarship Program
  - College Foundation Scholarships

- Federal and State Work-Study programs
- Federal Direct Loans
  - o Subsidized Loan
  - o Unsubsidized
  - o Federal Direct PLUS (Parent loan for under graduate students)

**Loan Entrance Counseling** must be completed for all first-time federal direct loan borrowers before loan funds can be disbursed. Additional information is provided on your award letter.

**Exit Counseling** must be completed after graduating or dropping below half-time. Students will be notified of this requirement, and be provided information and directions for completing this requirement, by the financial aid office at the appropriate time.

**Loan Repayment** begins six months after a student graduates or is no longer enrolled at least half-time.

### Applying for Financial Aid

All students are encouraged to apply for financial aid whether or not you think you may be eligible. To apply for financial aid, students must complete the Free Application for Federal Student Aid (FAFSA) at [www.fafsa.gov](http://www.fafsa.gov). It is recommended that students apply for financial aid each year by mid-March or as soon as they complete their federal income tax returns.

Returning students should complete a renewal application also available at [www.fafsa.gov](http://www.fafsa.gov). Your FAFSA requires an electronic signature or FSA ID which can be obtained at [fsaid.ed.gov](http://fsaid.ed.gov)

The federal processors may require that the college verify the accuracy of the data on your FAFSA through a process called "verification." Approximately 30% of all students are selected for federal verification. If a student is selected for verification, the student will receive an email from the Financial Aid Office to their student email address requesting additional information which may include: a copy of student, parent (if dependent student) or spouse (independent student) IRS Tax Transcript, W-2's, untaxed income information and other household information.

When the financial aid application has been completed, the student will receive an Award Letter, via the student eServices account, from the Financial Aid Office which details financial aid eligibility for grants, work-study and loans including required enrollment levels.

## Student Resources

### Enrollment and Success Coaches, Rm 117, 763-576-7710

Assistance provided to create a personalized success plan to reach your academic, career or personal goals. Walk-ins are welcome, and appointments have priority.

### Career Services/Job Placement

#### Student Success Center Rm 190F, 763-576-7780

Staffed by an employment counselor from the Minnesota Work Force Center-Anoka County, this office provides assistance with resumes, cover letters, interview preparation and other job search activities. Appointments are preferred.

### Computer Learning Lab

#### Academic Resource Center Rm 180, 763-433-1510 (Press 1)

Computer and internet access for students who are taking classes at Anoka Technical College. Complete assignments, work on group projects, and complete coursework for on-line classes. Assistance provided by Computer Lab Assistant (CLA) and others with computer expertise.



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[AnokaTech.edu](http://AnokaTech.edu)

## Counseling Services

**Student Success Center, Rm 190, 763-576-7860**

Academic, career, and personal counseling. Walk-ins are welcome, and appointments have priority.

## GED Testing through Metro North Adult Basic Education (ABE)

**Student Success Center Rm 190 O, 763-576-7840**

Resources for adults preparing for the GED test. See [Anokatech.edu](http://Anokatech.edu) for more information on hours and services.

## Library

**Academic Resource Center (ARC)**

Research and reference assistance, Student ID cards, fax transmittal and photocopying services, reservation of textbooks.

## Math Lab Rm 173

Free service for students seeking assistance with math. Drop-in tutoring provided by peer tutors and math instructors.

## Metro North Adult Basic Education (ABE)

**Student Success Center Rm 190N, 763-576-7845**

### Free program

Prepare for college; develop foundational skills in reading, writing, math, English and technology; prepare for GED or adult diploma; prepare for Accuplacer testing and retesting; and take English Language Learner (ELL) classes.

## Office of Accessibility

**Enrollment Services Rm 117, 763-576-7950**

Accommodations and service delivery provided for students with a documented disability. Call for appointment. Bring documentation to your scheduled meeting.

## Peer Tutoring Program 763-576-7760

Improve academic performance in technical coursework by working with a peer tutor. Free service. Peer tutors are faculty-recommended, exceptionally knowledgeable students enrolled in the same program as you. Tutor schedules are available in the Writing Center Rm 130.

## Testing Center

**Rm 103, 763-576-7830**

Testing services include initial placement testing, accommodated testing, make-up testing, and distance proctoring for students attending other colleges within the Minnesota State system. Test accommodations provided upon referral from the Office of Accessibility. Call for details or stop by the Testing Center.

## Veterans Center

**Rm 333**

The Veterans Center is space dedicated to veterans, reservists and family members and contains resources and information to support the transition from military to civilian life.

## North Metro Regional VA Coordinator

Charles Egerstrom, 763-433-1113 [cegerstrom@anokaramsey.edu](mailto:cegerstrom@anokaramsey.edu)

## Veteran's School Certifying Official 763-576-7740

Anoka Technical College welcomes and supports veterans, reservists and their families and recognizes the contributions they make as citizens and as students.

## Writing Center

**Rm 130, 763-576-4069**

Free service for students seeking assistance with writing. (See schedule in Writing Center for hours.)

## Student Life

Anoka Technical College is committed to providing a wide range of student life organizations that advance the college mission to help students and communities to live and learn well.

The student organizations are multidimensional and give students an opportunity to become engaged in campus activities to balance work and life, meet friends, and develop leadership skills and to enjoy the college experience. The student life organizations at Anoka Technical College are built around student and community interests and needs. To learn more, visit [AnokaTech.edu](http://AnokaTech.edu).

## Multicultural Student Center, Rm 177

Welcome! Lali! Willkommen! Bienvenue! Xin Chào, Bienveni-dos! The Multicultural Student Center at Anoka Technical College expand awareness and education about our multicultural society and workforce while broadening our view, acceptance, and appreciation of cultural diversity. The center is a source for information resources, and programming.

## Student Senate, Rm 175

The Student Senate serves as advocates for all Anoka Technical College students. In addition to being the voice in front of local and state elected officials for fighting for lower tuition and more financial aid, the Student Senate represents the student body at meetings and in college committees. They also subsidize the cost of professional conferences and competitions for students and provide social, educational, cultural and leadership activities for the entire college.

The Student Senate meetings are open to all students. The meetings are held on the 1st and the 3rd Wednesday of the month.

## Phi Theta Kappa

Phi Theta Kappa's mission is two-fold:

1. Recognize and encourage the academic achievement of two-year college students and
2. Provide opportunities for individual growth and development through participation in honors, leadership, service and fellowship programming.

## Clubs and Organizations

Anoka Technical College strives to provide students opportunities to engage with other students, faculty, and staff through student activity, student organization, and other student life programming.

Current Student Life opportunities at Anoka Technical College include:

- **Business Professionals of America** provides students opportunities to develop leadership skills and engage more in their field.
- **Drone Robotics Club** provides students opportunities to develop leadership skills and engage more in their field.
- **Health Information Technology (HIT) Club** opportunities to develop leadership skills and engage more in their field.
- **Leisure Club** provide ATC students with gathering, events and other entertaining opportunities.
- **Medical Assistant Club** opportunities to develop leadership skills and engage more in their field.
- **Multicultural Club** provides students with opportunities to enhance the appreciation and understanding of the diversity within the college and the community.
- **Occupational Therapy Club (TECOTA)** offers students the opportunity to develop leadership skills and engage more in their field.



[AnokaTech.edu](http://AnokaTech.edu)

- **Peer Tutors** are students trained to tutor their peers in a variety of academic subjects.
- **Practical Nursing** opportunities to develop leadership skills and engage more in their field.
- **Welding Club (Skills-USA)** provides opportunities for students to complete in their field.

### Career Planning Resources

College Central is a job search website for Anoka Technical College students and alumni. College Central offers a tools such as a resume builder, and resources related to job search. Visit [Collegecentral.com/anokatech/](http://Collegecentral.com/anokatech/)

## Student Policies

### Student Rights and Responsibilities

#### Student Code of Conduct

As an institution dedicated to teaching and learning, Anoka Technical College has a vested interest in maintaining an environment in which all students are free to pursue their academic interests and responsibilities. Conduct by a single student or group of students that unreasonably restricts such freedom and interferes with the college mission of promoting student learning is subject to regulation and/or sanction by the college. The creation of such an environment is premised on the assumption that students have both rights and responsibilities. Therefore, a major function of the college is to guarantee student rights and at the same time to expect student responsibility.

The Anoka Technical College *Student Code of Conduct* serves two purposes: to serve as a guide for student behavior and outline the procedure to be followed, both by students and college officials, should violations of the Code occur. It is expected that all students will read and abide by the full *Student Code of Conduct* available in the *Student Handbook*.

#### [Policy 3.12 Student Complaint Process](#)

### Student Data Practices

Minnesota State complies with the Family Educational Rights and Privacy Act (FERPA), the Minnesota Government Data Practices Act (MGDPA), and other applicable laws and regulations concerning the handling of educational data. The full Data Practices policy can be found on the college website.

### Use of Email for Official Communication

Anoka Technical College uses college-assigned email addresses as the official means of communications with all students. All new students will receive their my.anokatech.edu email account during New Student Orientation. Students are responsible for information sent to them via their email account. My.anokatech.edu, a free web-based Microsoft Outlook 365 email account, is Anoka Technical College's official means of communicating with students.

## Academic Policies

### Grades

Student academic performance shall be evaluated solely on the basis of academic standards, including any requirements that are noted in the catalog, course syllabus, or student handbook. Students may review their corrected examinations or other required assignments used by the faculty in evaluating the student's academic performance.

### Explanation of Grades

Grades of "A", "B", "C", "D", "F", "P", "S" and "U" are used in evaluating performance in the classes or major and are given to a student each term.

- A** - denotes excellent achievement
- B** - denotes above average achievement
- C** - denotes average achievement
- D** - denotes below average achievement
- F** - denotes unsatisfactory achievement
- P** - denotes passing achievement
- S** - denotes satisfactory achievement
- U** - denotes unsatisfactory achievement
- I** - denotes incomplete work because of unavoidable circumstances. An incomplete must be made up under a schedule arranged with the instructor within one semester.
- IP** -denotes a course that is in progress and for which no grade has been assigned. It is only used to exclude ungraded courses from the Satisfactory Academic Progress report.
- W** -denotes withdrawal from a course during the withdrawal period.
- FN** -denotes that a student never attended the course but never officially dropped the course.
- FW** -denotes that a student began attending the course, never completed it, and never officially withdrew from the course.
- AU** -denotes audit and a student has registered for and attended a class, but did not earn credit.
- Z** -denotes a course that is active or not reported.

### Grade Average Point (GPA)

The following system will be used to determine a student's grade-point average:

- A = four grade-points per credit
- B = three grade-points per credit
- C = two grade-points per credit
- D = one grade-point per credit
- F, FN, FW = zero grade-points per credit
- AU, I, S, P, U, W, Z, IP = not considered in determining GPA

A student's GPA is determined by adding all grade-points earned and dividing by the sum of all credits attempted in courses for which grade-points are earned. GPA is calculated on a semester and a cumulative basis. The GPA calculation does not include test-out grades, transfer grades, advanced placement or credit for prior learning.

### Incompletes

If a student is passing and misses an examination or fails to turn in a major assignment or project as determined by the instructor, a grade of Incomplete may be given. An incomplete must be made up under a schedule arranged with the instructor. Work not properly made up results in an "I" being changed to an "F" at the end of the following term. However, incompletes given at the end of spring semester will be changed to an "F" at the end of fall semester if not properly made up, since summer session is excluded.

### Prerequisite Courses

If the completion of a course in which the student earns an incomplete is a prerequisite for another course, registration for the subsequent course is at the discretion of the instructor of the second course. This policy does not apply to developmental prerequisites.

### Grades – Repeating Courses

Students may repeat courses for purposes of achieving a higher grade or to review material. All courses and grades earned are reflected on the student transcript. The course that was previously taken is not counted in the GPA calculation but will count as attempted credits for calculation of satisfactory academic progress and financial aid purposes.



Students must register and pay tuition and fees for repeated courses. Test-outs and independent studies are not acceptable means of retaking a failed course.

A student is allowed to repeat a course one time. Failure to successfully complete a course when repeating it will result in being ineligible to re-register for that course. After two attempts, students may petition to repeat a course by submitting an Academic Petition to the Dean of Academic Affairs. If the petition is approved, the Records Office will assist students with registration since students are unable to register for a course through eServices after the second attempt.

Failing to successfully complete a repeated course may exclude the student from certain program majors. In addition, financial aid may not cover the cost of repeated courses, so students are advised to contact the Financial Aid Office before repeating a course.

#### [Policy 3.8 Grading](#)

#### [Policy 3.9 Academic Grade Appeal](#)

### Satisfactory Academic Progress (SAP)

Anoka Technical College and the *Minnesota State Board Policy 2.9.1*, in compliance with federal and state regulations, require that all students maintain satisfactory academic progress toward the completion of a degree, diploma or certificate in order to be eligible to receive financial aid (including Federal and State work study, loans, grants, and some scholarships) and remain in good academic standing and continue their enrollment. The purpose of this requirement is to encourage all students to progress steadily at a reasonable rate toward graduation.

The full Satisfactory Academic Policy (SAP) policy and can be found at AnokaTech.edu.

#### [Policy 2.7 Satisfactory Academic Progress](#)

#### Academic Petition

An *Academic Petition* can be used to request a waiver to the academic policies of the college, such as course prerequisites, program requirements, repeating courses, Accuplacer re-testing policy, etc. The form can be found at AnokaTech.edu

#### Academic Due Process

*Academic Due Process* is used when a student believes they have a valid complaint regarding the content or conduct of a course or grading. The form can be found at AnokaTech.edu

#### Academic Forgiveness

The *Academic Forgiveness Petition* can be used when a student is seeking forgiveness of previous unsatisfactory academic coursework at Anoka Technical College. The student must meet the conditions listed on the form and contained in the Anoka Technical College Policy 2.11. The form can be found at AnokaTech.edu

#### [Policy 2.11 Academic Forgiveness](#)

### Graduation

#### Graduation Requirements

1. A student will earn a certificate, diploma, or AAS degree upon satisfactorily completing all requirements for graduation and complying with all applicable policies of the college.

2. Students must maintain a cumulative 2.0 GPA to be eligible for a certificate, diploma, or AAS degree. Note that some program majors may have additional GPA and/or grading requirements for graduation.
3. Students who do not meet graduation requirements will be notified by letter. Students must reapply for graduation after meeting the requirements.
4. Students will graduate at the end of the term in which they complete all course requirements. However, a student may be allowed to participate in commencement if he/she desires to walk with his/her cohort but has outstanding graduation requirements of 7 credits or less and the courses are offered the following semester. The student will not receive an award until successfully completing outstanding program requirements. If more than 7 credits are left to be completed, the student will be allowed to participate in commencement after all program requirements are completed the following term.
5. When the student completes all the requirements for graduation and is awarded a certificate, diploma, or AAS degree, he/she will receive an official transcript at no charge along with the award in the mail. Additional copies of official transcripts may be obtained for a fee by submitting a request through [www.getmytranscript.com](http://www.getmytranscript.com) or to the Records Office.
6. Official Transcripts and awards cannot be released until all financial obligations to Anoka Technical College are met.
7. Students who achieve a cumulative GPA of at least 3.5 by the last semester completed prior to graduation will be recognized as honor students at the graduation ceremony and in the graduation program. The calculation does not include the final semester grades.
8. Students who achieve a cumulative Anoka Technical College GPA of 3.5 and above at the time of award completion will receive a transcript notation indicating graduation with honors. Note that this calculation includes the final semester grades, which is different than the calculation in item 7.
9. Students seeking exceptions to the requirements must submit a [graduation appeal](#) to the Dean of Student Affairs.
10. Anoka Technical College reserves the right to automatically post certificate, diploma and degree completion to the student academic record upon the verification that all degree requirements have been satisfied.

To receive a degree from Anoka Technical College, students must earn one third of their credits through enrollment in Anoka Technical College courses. Credit awarded through Credit for Prior Learning (CPL) internal college assessments count toward the one third requirement.

#### [Policy 2.4 Graduation](#)

#### Important Note

Program plans are subject to change. Please contact your program advisor for the most current program information.



## Award Types

### Associate of Applied Science (AAS)

The Associate of Applied Science (AAS) degree is intended for students who plan to use the knowledge and skills gained through their degree for immediate employment. This degree will include at least 15 credits of Minnesota Transfer Curriculum (MnTC) credits selected from three of the ten goal areas. All AAS degrees will take at least two years to complete.

#### Transfer Note

The AAS degree is not designed to transfer to a four-year college or University. However, the MnTC courses typically do transfer and some of the career-oriented courses taken at Anoka Technical College may also transfer to specific majors at selected schools. Many of the AAS degree programs have articulation agreements with four-year institutions for transfer of the program.

- Administrative Office Specialist
- Architectural Technology
- Automotive Technician
- Biomedical Equipment Technician
- Business Data Analyst
- CNC Design & Manufacturing Technology
- Community Social Services
- Health Information Technology
- Information Technology Management
  - Network Management & Security
  - Software Development
  - Web Design & Development
- Judicial Reporting
- Legal Assistant
- Mechanical Drafting and Design
- Medical Assistant
- Medical Office Specialist
- Occupational Therapy Assistant
- Paramedic
- Quality Technician
- Robotic and Electronic Engineering Technology
- Robotic and Laser Welding
- Special Electronics
- Supervisory Management
- Surgical Technology
- Welding

### Diploma

A diploma is a comprehensive program with extensive technical coursework to help develop job skill that will lead directly to employment. Students choose a specific area of study and will complete their education in one or two years. Many courses within a diploma program may apply toward an AAS degree in the discipline.

- Administrative Office Specialist
- Advanced CNC Manufacturing Technology
- Architectural and Construction Technician
- Automotive Technician
- Business Data Analyst
- CNC Service Technician
- Construction Electrician
- Electronic Technology
- Legal Assistant
- Mechanical CAD Drafter
- Medical Assistant
- Medical Coding Specialist
- Medical Receptionist

- Network Management & Security
- Practical Nursing
- Software Development
- Web Design & Development
- Welding Technology

### Certificate

Certificates are designed for those students who wish to develop occupational skills for specific job that will lead directly to employment. Students will choose a specific area of study and will complete their education in less than one year. Many courses within a certificate program may apply toward a diploma or an AAS degree in the discipline.

- Architectural 2D CAD
- Basic Welding
- CART and Broadcast Captioning
- Construction Estimating
- Emergency Medical Services
- Health Unit Coordinator
- Health Technology
- Human Resource Development
- IT Support
- Legal Assistant
- Machine Technology 1
- Machine Technology 2
- Machine Technology 3
- Mechanical CAD Operator
- Nursing Assistant/Home Health Aide
- Office Communications Specialist
- Office Software Specialist
- Pipe Welder
- Quality Inspector
- Quality Supervision
- Robotic and Laser Welding
- Scoping/Proofreading
- Sterile Processing
- Supervisory Leadership
- Trained Medication Aide (TMA)
- Welding Fabricator

## Divisions and Programs

### General Education

The General Education department offers select courses to prepare individuals for employment in their programs. Courses are currently offered in Biology, English, Mathematics, Philosophy, Psychology, Sociology and Speech. Courses are offered every semester including summer semester. Many offer online or partially online sections in addition to classroom instruction.

Some general education courses are approved as part of the Minnesota Transfer Curriculum (MnTC) and are intended to be accepted at other Minnesota State institutions.

Note: Anoka Technical College does not certify completion of the MnTC. However, the college does recognize and indicate courses and their goal area(s) in the MnTC on the student's *Degree Audit Report (DARS)*.

### Career Clusters

- Automotive Technology
- Behavioral Health and Human Services
- Construction, Engineering, Manufacturing & Technology
- Health Science Technology
- Information Technology Management
- Legal, Administration & Management



### Special Note for Students Interested in Health Careers

Minnesota Law requires that any person who provides services that involve direct contact with patients and/or residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate at a clinical site.

The student has the right to request reconsideration of the disqualification. For consideration to continue in the program, the student must request reconsideration and provide a copy of such request. The student is responsible for requesting the commissioner to reconsider the disqualification. The college will withdraw any student who is disqualified by the Minnesota Department of Health.

### Minnesota Transfer Curriculum (MnTC)

The Minnesota Transfer Curriculum (MnTC) general education credits from Anoka Technical College transfer to all Minnesota State institutions.

#### Core Goal Areas

- Goal 1: Communication
- Goal 2: Critical Thinking
- Goal 3: Natural Sciences
- Goal 4: Mathematics/Logical Reasoning
- Goal 5: History and the Social and Behavioral Sciences
- Goal 6: The Humanities and Fine Arts
- Goal 7: Human Diversity
- Goal 8: Global Perspective
- Goal 9: Ethical and Civic Responsibility
- Goal 10: People and the Environment

#### Goal 1

COMM 1055	Strengths & Wellness	3 cr
ENGL 1107	Composition I	4 cr
ENGL 1110	Research Project	1 cr
ENGL 2105	Business & Technical Writing	4 cr
SPCH 1120	Public Speaking	3 cr
SPCH 1200	Interpersonal Communication	3 cr
SPCH 1500	Intercultural Communication	3 cr

#### Goal 2:

BIOL 1106	Principles of Biology	4 cr
BIOL 1130	Human Biology	4 cr
BIOL 2100	Anatomy & Physiology I	4 cr
BIOL 2200	Anatomy & Physiology II	4 cr
COMM 1055	Strengths & Wellness	3 cr
ENGL 1107	Composition I	4 cr
ENGL 1150	Multicultural Literature	4 cr
ENGL 2105	Business & Technical Writing	4 cr
INTS 1000	Critical Thinking Applications for College	3 cr
INTS 1010	College and Career Success	1 cr

#### Goal 3

BIOL 1106	Principles of Biology	4 cr
BIOL 1130	Human Biology	4 cr
BIOL 2100	Anatomy & Physiology I	4 cr
BIOL 2200	Anatomy & Physiology II	4 cr

#### Goal 4

MATH 1500	Mathematical Ideas	3 cr
MATH 1550	Introduction to Statistics	4 cr
MATH 1600	College Algebra	4 cr
MATH 1650	College Trigonometry	3 cr
MATH 1700	Pre-Calculus	5 cr

#### Goal 5

PSYC 1406	General Psychology	4 cr
PSYC 1506	Lifespan Development	4 cr
PSYC 1606	Abnormal Psychology	4 cr
SOSC 1010	Introduction to Sociology	3 cr
SOSC 2000	Sociology at Work	4 cr

#### Goal 6

ENGL 1150	Multicultural Literature	4 cr
ENGL 2110	Literature and the Environment	4 cr

#### Goal 7

ASL 1000	ASL Deaf Studies/Culture	3 cr
ENGL 1150	Multicultural Literature	4 cr
SOSC 1010	Introduction of Sociology	3 cr
SPCH 1200	Interpersonal Communication	3 cr
SPCH 1500	Intercultural Communication	3 cr

#### Goal 8

PHIL 1200	Technology, Ethics and Society	3 cr
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#### Goal 10:

ENGL 2110	Literature and the Environment	4 cr
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The background features a series of overlapping, angular geometric shapes in shades of grey, black, yellow, and orange, creating a sense of depth and movement. A large, solid orange trapezoidal shape is positioned in the upper right quadrant, containing the text. The lower half of the image is a smooth gradient from light to dark orange.

# **Automotive Technology**

# Automotive Technician

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 57  
 MnTC General Education ..... 15  
 Total Credits ..... 72

## Program Information

The Anoka Technical College Automotive Technician Associate of Applied Science (AAS) degree is intended for advanced individuals who are looking for additional possibilities in their automotive future. This 72-credit program not only provides an individual with an entry level career in the automotive service industry, it can also increase future educational or career options. The general education credits contained within the AAS can lead to leadership positions within the industry as well as act as a stepping stone to a Bachelor of Arts (BA) degree in Engineering or Business Management.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Develop the knowledge and demonstrate an understanding of automotive related systems, components, terminology and acronyms.
2. Develop and demonstrate knowledge, skills, and attitudes essential to the automotive repair industries expectations of performance.
3. Demonstrate the ability to utilize computer and non-computer based vehicle service information systems.
4. Use automotive tools, shop and test equipment, materials, and chemicals safely and effectively.
5. Develop critical and creative thinking processes required to effectively and efficiently diagnose and repair vehicle technical problems.

## Admission Requirements

Successful completion of the Automotive diploma or instructor approval.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

For insurance purposes, internships may require that students be 18 years old for the automotive program. Students must also possess a valid driver’s license.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

With more than 230,000,000 light-duty cars and trucks on the road in the United States alone, there will always be jobs for qualified technicians. One of the automotive technician’s most in-demand and valuable skills is the ability to make a quick and accurate problem diagnosis. This requires a thorough knowledge and understanding of light-duty vehicles and their systems. Good reasoning abilities and critical thinking along with the ability to locate and understand vehicle service information is also important. Daily, the technician will rely on computerized service information to locate system theory of operation, diagnostic and troubleshooting procedures, specifications, repair procedures and technical service bulletins as they service customer vehicles. It may be necessary to provide accurate repair estimates and communicate with customers and coworkers.

Many technicians will perform a variety of repairs while others will seek additional training in order to specialize. Areas of specialization include the diagnosis and repair of engines or transmissions, electrical systems, driveability or performance (fuel and ignition), air conditioning, suspension systems and wheel alignment. Due to the ever increasing use of electronics and new technology in the vehicles of the future, the ability to adapt and continue learning will be very important.

The AAS degree can accelerate career opportunities and lead to many other related paths within the automotive service/sales area including merchandising, parts and vehicle sales. Experienced technicians who are able to communicate well with customers may become service advisors. Those with leadership abilities may advance to supervisory or management positions and manufacturer representatives. Some may elect to open their own repair shops or seek additional education in engineering or business management.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August

## Program Sequence

<b>Fall Semester</b> .....	<b>16</b>
<input type="checkbox"/> AUTO 1000 Orientation and Safety .....	1
<input type="checkbox"/> AUTO 1010 General Auto Service .....	2
<input type="checkbox"/> AUTO 1167 Vehicle Electronics .....	5
<input type="checkbox"/> AUTO 2145 Suspension and Steering System Service .....	4
<input type="checkbox"/> AUTO 2159 Brake System and Service .....	4
<b>Spring Semester</b> .....	<b>20</b>
<input type="checkbox"/> AUTO 2005 Supervised Internship I .....	2
<input type="checkbox"/> AUTO 2164 Chassis Electrical Systems .....	3
<input type="checkbox"/> AUTO 2166 Starting and Charging Systems .....	2
<input type="checkbox"/> AUTO 2183 Fuel and Ignition Management Systems .....	6
<input type="checkbox"/> MATH 1500 Mathematical Ideas .....	3
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	4



# Automotive Technician

Associate of Applied Science (AAS) Degree

<b>Fall Semester</b> .....	<b>18</b>
<input type="checkbox"/> AUTO 2006 Supervised Internship II .....	2
<input type="checkbox"/> AUTO 2119 Engine Repair and Service .....	6
<input type="checkbox"/> AUTO 2129 Automatic Transmission Condition .....	6
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<b>Spring Semester</b> .....	<b>18</b>
<input type="checkbox"/> AUTO 2007 Supervised Internship III .....	2
<input type="checkbox"/> AUTO 2135 Manual Drive Train System and Service .....	4
<input type="checkbox"/> AUTO 2175 Automotive Climate Control and Service .....	4
<input type="checkbox"/> AUTO 2187 Automotive Computer Systems and Driveability	4
<input type="checkbox"/> SOSC 2000 Sociology of Work .....	4

### Faculty Contact

<a href="#">Dave Holmquist</a> .....	763-576-4187
<a href="#">Dave Larson</a> .....	763-576-4019
<a href="#">Dave McFarland</a> .....	763-576-4193

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Automotive Technician diploma*

### Program Information

The Anoka Technical College Automotive Technician diploma is a 60-credit program that prepares graduates for an entry level career in the automotive service industry. Most entry level automotive technicians start as tire or lube techs. Within a few months they will be performing many routine service tasks and perform simple repairs. It usually takes two to five years of on-the-job training to become a journey-level technician. This means that the technician is skilled enough to perform difficult repairs. However, graduates of a college-level training program are often able to advance to that level in a shorter period of time.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Develop the knowledge and demonstrate an understanding of automotive related systems, components, terminology and acronyms.
2. Develop and demonstrate knowledge, skills, and attitudes essential to the automotive repair industries expectations of performance.
3. Demonstrate the ability to utilize computer and non-computer based vehicle service information systems.
4. Use automotive tools, shop and test equipment, materials, and chemicals safely and effectively.
5. Develop critical and creative thinking processes required to effectively and efficiently diagnose and repair vehicle technical problems.

### Admission Requirements

Next Generation Accuplacer reading score must be above 232 or equivalent to be accepted into the program.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

Auto 2005 Supervised Internship I- course prerequisites:

- Due to employer insurance requirements, a minimum age of 18 may be required for internship participation.
- Students are required to possess or expect to receive a valid Driver’s License prior to the start of the Internship.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

With more than 230,000,000 light-duty cars and trucks on the road in the United States alone, there will always be jobs for qualified technicians. One of the automotive technician’s most in-demand and valuable skills is the ability to make a quick and accurate problem diagnosis. This requires a thorough knowledge and understanding of light-duty vehicles and their systems. Good reasoning abilities and critical thinking along with the ability to locate and understand vehicle service information is also important. Daily, the technician will rely on computerized service information to locate system theory of operation, diagnostic and troubleshooting procedures, specifications, repair procedures and technical service bulletins as they service customer vehicles. It may be necessary to provide accurate repair estimates and communicate with customers and coworkers.

Many technicians will perform a variety of repairs while others will seek additional training in order to specialize. Areas of specialization include the diagnosis and repair of engines or transmissions, electrical systems, driveability or performance (fuel and ignition), air conditioning, suspension systems and wheel alignment. Due to the ever increasing use of electronics and new technology in the vehicles of the future, your ability to adapt and continue learning will be very important.

There are many other related career paths within the automotive service/sales area including merchandising, parts and vehicle sales. Experienced technicians who are able to communicate well with customers may become service advisors. Those with leadership abilities may advance to supervisory or management positions and manufacturer representatives. Some may elect to open their own repair shops.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August

### Program Sequence

<b>Fall Semester</b>	.....	<b>16</b>
<input type="checkbox"/> AUTO 1000	Orientation and Safety .....	1
<input type="checkbox"/> AUTO 1010	General Auto Service.....	2
<input type="checkbox"/> AUTO 1167	Vehicle Electronics .....	5
<input type="checkbox"/> AUTO 2145	Suspension and Steering System Service .....	4
<input type="checkbox"/> AUTO 2159	Brake System and Service .....	4



# Automotive Technician

Diploma

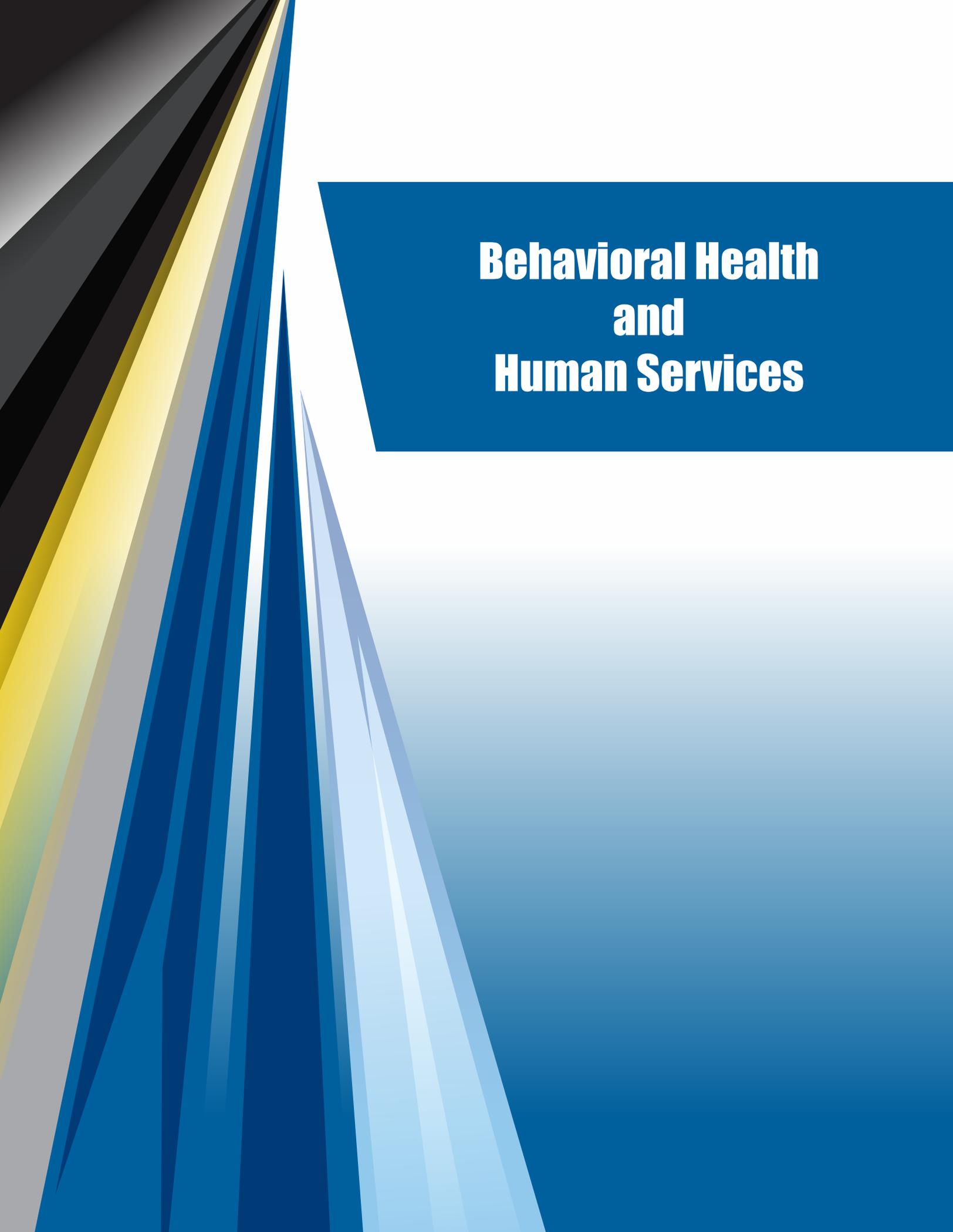
<b>Spring Semester</b> .....	<b>13</b>
<input type="checkbox"/> AUTO 2005 Supervised Internship I .....	2
<input type="checkbox"/> AUTO 2164 Chassis Electrical Systems .....	3
<input type="checkbox"/> AUTO 2166 Starting and Charging Systems .....	2
<input type="checkbox"/> AUTO 2183 Fuel and Ignition Management Systems .....	6
<b>Fall Semester</b> .....	<b>17</b>
<input type="checkbox"/> AUTO 2006 Supervised Internship II .....	2
<input type="checkbox"/> AUTO 2119 Engine Repair and Service .....	6
<input type="checkbox"/> AUTO 2129 Automatic Transmission Condition .....	6
Choose one of the following elective courses:	
<input type="checkbox"/> AUTO 2450 Fundamental Welding for Automotive.....	3
<input type="checkbox"/> AUTO 2460 Hybrid and Electric Vehicle Services and Safety	4
<input type="checkbox"/> <a href="#">MnTC General Education elective</a> .....	3
<b>Spring Semester</b> .....	<b>14</b>
<input type="checkbox"/> AUTO 2007 Supervised Internship III .....	2
<input type="checkbox"/> AUTO 2135 Manual Drive Train System and Service .....	4
<input type="checkbox"/> AUTO 2175 Automotive Climate Control and Service .....	4
<input type="checkbox"/> AUTO 2187 Automotive Computer Systems and Driveability	4

### Faculty Contact

<a href="#">Dave Holmquist</a> .....	763-576-4187
<a href="#">Dave Larson</a> .....	763-576-4019
<a href="#">Dave McFarland</a> .....	763-576-4193

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Automotive Technician AAS*



**Behavioral Health  
and  
Human Services**

## Program Information

The Behavioral Health and Human Services Program is designed to prepare students to become direct service providers or designated coordinators in settings where vulnerable or at-risk people are housed or treated. Direct service providers also known as Behavioral Health Workers, are the caregivers in these settings, and the designated coordinators oversee the daily activities of the setting.

The program exposes students to the laws, rules, and regulations surrounding the care and treatment of vulnerable people, specifically developmentally, mentally and cognitively disabled people. Additionally, the program trains students how to best support developmentally or mentally disabled people, as well as to understand the psychological characteristics of and treatments for various developmental and cognitive disabilities.

Additionally, program coursework also helps define the roles of the behavioral health worker, direct service provider, designated coordinator and social worker as advocates and resource providers, helping vulnerable clients and residents receive care and services. Coursework in social work, social services, and the broad base of sociology and psychology classes taken as part of this program will prove valuable for those students who wish to transfer to a four-year institution to potentially major in human services, psychology, social work or sociology.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Students apply skills in a meaningful way (Demonstrating higher level thinking-analysis evaluation, and synthesis)
2. Performance assessment allows for evaluation of attitudes/dispositions.
3. Student develop and create original responses to the topic.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BIOL 1130 Human Biology** Prerequisites READ 0900 or READ 0960 or appropriate test score.
- **ENGL 1107 Composition I** Prerequisites READ 0900 or READ 0960 and ENGL 0102 or ENGL 0960 or appropriate test score.

## Background Study

Minnesota Law requires that any person who provides services that involve direct contact with patients and/or residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate at a clinical site. The student has the right to request reconsideration of the disqualification.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Students graduating from the Behavioral Health and Human Services (BHHS) Associate in Applied Science (AAS) degree program are eligible for positions in several areas in the health, human services and education fields with children, adolescents, adults and senior citizens. The graduating student may serve a variety of at-risk populations including people with disabilities, mental illness, substance abuse, poverty and disadvantaged.

Students who may be interested in social work, sociology, psychology or other health-related areas may want to consider the BHHS program as a well-rounded educational base to support further development of generalist skills at a four-year institution.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester ..... January

## Technical Education: 38 Credits

<b>First Semester</b> .....	<b>16</b>
<input type="checkbox"/> BHHS 1005 Introduction to Behavioral Health and Human Services .....	2
<input type="checkbox"/> BHHS 1010 Direct Support Professionalism .....	3
<input type="checkbox"/> BHHS 1040 Facilitating Positive Behaviors .....	3
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<input type="checkbox"/> PSYC 1406 General Psychology .....	4
<b>Second Semester</b> .....	<b>15</b>
<input type="checkbox"/> BHHS 1020 Physical Developmental Supports I.....	3
<input type="checkbox"/> BHHS 1030 Person Centered Planning.....	3
<input type="checkbox"/> BHHS 1570 Introduction to Social Work.....	3
<input type="checkbox"/> BIOL 1130 Human Biology .....	4
<input type="checkbox"/> HLTH 1040 Medical Terminology.....	2
<b>Third Semester</b> .....	<b>16</b>
<input type="checkbox"/> BHHS 1550 Social Services Projects.....	3
<input type="checkbox"/> BHHS 1560 Social Welfare Services .....	3
<input type="checkbox"/> BHHS 2050 Supportive Interventions.....	4
<input type="checkbox"/> BHHS 2020 Physical Developmental Supports II .....	3
<input type="checkbox"/> HLTH 1000 Disease Conditions .....	2



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# Behavioral Health and Human Services

Associate of Applied Science (AAS) Degree

<b>Fourth Semester .....</b>	<b>13</b>
<input type="checkbox"/> BHHS 2020 Physical Developmental Supports II .....	3
<input type="checkbox"/> PSYC 1506 Lifespan Development.....	4
<b>OR</b>	
<input type="checkbox"/> PSYC 1606 Abnormal Psychology .....	4
<input type="checkbox"/> SOSC 1010 Introduction to Sociology .....	3
<input type="checkbox"/> SPCH 1200 Interpersonal Communications .....	3
<b>OR</b>	
<input type="checkbox"/> SPCH 1500 Intercultural Communications .....	3

## Faculty Contact

[Zakia Robbins](#)..... 763-576-4182

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)



**Construction, Engineering,  
Manufacturing & Technology**

# Architectural Technology

Associate of Applied Science (AAS) Degree

Technical Requirements .....	45
MnTC General Education .....	15
Total Credits .....	60

## Program Information

The Anoka Technical College Associate of Applied Science (AAS) degree in Architectural Technology is a 60-credit program. The program consists of technical courses designed to develop skills which can be applied to a wide variety of careers in the design-construction industry including employment with architectural and engineering firms, residential builders and construction material supplies.

In addition to drafting and detailing skills, the student receive training in related areas such as construction estimating, building codes, building mechanical and electrical systems, as well as emerging technologies in energy-efficient design. Students receive hands-on training in industry standard computer-aided drafting software (AutoCAD and Revit).

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will demonstrate residential construction materials and methods knowledge.
- Students will demonstrate commercial construction materials and methods knowledge.
- Students will execute program/industry CAD drafting standards for residential construction drawings.
- Students will execute program/industry CAD drafting standards for commercial construction drawings.
- Students will demonstrate entry level CAD proficiency for the industry.
- Students will demonstrate understanding of the roles and responsibilities of an entry level architectural CAD technician.

## Course Prerequisites

Some courses may require an appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Graduates of the Architectural Technology AAS degree program learn skills and technology which can be applied to a wide variety of careers in the design-construction industry, including employment with architectural and engineering firms, residential builders and construction material suppliers.

Drafters who gain experience and knowledge may become design drafters or senior drafters. With additional training or experience, drafters may also move into related positions, such as technical writer, sales engineer or engineering assistant.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
Spring Semester.....January\*\*

\*\*Students who start in the spring will need more time to complete this program.  
Limited first semester technical courses are offered in the Spring semester.

## MnTC General Education Requirements

Fifteen (15) credits of general education credits from the [Minnesota Transfer Curriculum \(MnTC\)](#) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.

## Program Sequence

<b>Fall Semester</b> .....	<b>10</b>
<input type="checkbox"/> ARCH 1000 Residential Construction.....	2
<input type="checkbox"/> ARCH 1002 Construction Print Reading.....	2
<input type="checkbox"/> ARCH 1040 Residential Graphics.....	1
<input type="checkbox"/> ARCH 1043 Architectural CAD I .....	3
<input type="checkbox"/> CEST 1030 Project Management for Estimators .....	2
<b>Spring Semester</b> .....	<b>10</b>
<input type="checkbox"/> ARCH 1004 Introduction to Architectural Profession.....	2
<input type="checkbox"/> ARCH 1015 Commercial Construction.....	2
<input type="checkbox"/> ARCH 1045 Commercial Graphics .....	1
<input type="checkbox"/> ARCH 1052 Architectural CAD II .....	3
<input type="checkbox"/> ARCH 2025 Revit Architectural 3D CAD .....	2
<b>Fall Semester</b> .....	<b>14</b>
<input type="checkbox"/> ARCH 2005 Residential CAD Studio .....	4
<input type="checkbox"/> ARCH 2027 Intermediate Revit 3D CAD .....	2
<input type="checkbox"/> ARCH 2070 Commercial Design .....	2
<input type="checkbox"/> ARCH 2085 Structural Technology.....	3
<input type="checkbox"/> CEST 1000 Construction Estimating I .....	3
<b>Spring Semester</b> .....	<b>11</b>
<input type="checkbox"/> ARCH 1031 Building Systems .....	2
<input type="checkbox"/> ARCH 2029 Advanced Revit 3D CAD .....	3
<input type="checkbox"/> ARCH 2055 Commercial CAD Studio.....	3
<input type="checkbox"/> CEST 1010 Construction Estimating II.....	3

## Faculty Contact

<a href="#">Daniel Iund</a> .....	763-576-4163
<a href="#">Mark Anderson</a> .....	763-576-4078
<a href="#">Dawn Wirtz</a>	

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

Also see: *Architectural and Construction Technician diploma, Architectural 2D CAD, and Construction Estimating certificate*



### Program Information

The Anoka Technical College Architectural and Construction Technician diploma is a 45-credit program that consists of skills and technology which can be applied to a wide variety of careers in the design-construction industry including employment with architectural and engineering firms, residential builders, and construction material suppliers.

The Architectural and Construction Technology program consists of technical courses designed to develop skills related to the fields of architecture, engineering, contracting, and other design-construction fields.

In addition to drafting and detailing skills, the student receive training in related areas such as construction estimating, building codes, building mechanical and electrical systems, as well as emerging technologies in energy-efficient design. Students receive hands-on training in industry standard computer-aided drafting software (AutoCAD and Revit).

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will demonstrate residential construction materials and methods knowledge.
- Students will demonstrate commercial construction materials and methods knowledge.
- Students will execute program/industry CAD drafting standards for residential construction drawings.
- Students will execute program/industry CAD drafting standards for commercial construction drawings.
- Students will demonstrate entry level CAD proficiency for the industry.
- Students will demonstrate understanding of the roles and responsibilities of an entry level architectural CAD technician.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Graduates of the Architectural and Construction Technician diploma program learn skills and technology which can be applied to a wide variety of careers in the design-construction industry, including em-

ployment with architectural and engineering firms, residential builders and construction material suppliers.

Drafters who gain experience and knowledge may become design drafters or senior drafters. With additional training or experience, drafters may also move into related positions, such as technical writer, sales engineer, or engineering assistant.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*  
 \*\*Students who start in the spring will need more time to complete this program.  
 Limited first semester technical courses are offered in the spring semester.

### Program Sequence

<b>Fall Semester</b> .....	<b>10</b>
<input type="checkbox"/> ARCH 1000 Residential Construction.....	2
<input type="checkbox"/> ARCH 1002 Construction Print Reading.....	2
<input type="checkbox"/> ARCH 1040 Residential Graphics.....	1
<input type="checkbox"/> ARCH 1043 Architectural CAD I .....	3
<input type="checkbox"/> CEST 1030 Project Management for Estimators .....	2
<b>Spring Semester</b> .....	<b>10</b>
<input type="checkbox"/> ARCH 1004 Introduction to Architectural Profession.....	2
<input type="checkbox"/> ARCH 1015 Commercial Construction.....	2
<input type="checkbox"/> ARCH 1045 Commercial Graphics.....	1
<input type="checkbox"/> ARCH 1052 Architectural CAD II .....	3
<input type="checkbox"/> ARCH 2025 Revit Architectural 3D CAD .....	2
<b>Fall Semester</b> .....	<b>14</b>
<input type="checkbox"/> ARCH 2005 Residential CAD Studio .....	4
<input type="checkbox"/> ARCH 2027 Intermediate Revit 3D CAD .....	2
<input type="checkbox"/> ARCH 2070 Commercial Design .....	2
<input type="checkbox"/> ARCH 2085 Structural Technology.....	3
<input type="checkbox"/> CEST 1000 Construction Estimating I .....	3
<b>Spring Semester</b> .....	<b>11</b>
<input type="checkbox"/> ARCH 1031 Building Systems.....	2
<input type="checkbox"/> ARCH 2029 Advanced Revit 3D CAD.....	3
<input type="checkbox"/> ARCH 2055 Commercial CAD Studio.....	3
<input type="checkbox"/> CEST 1010 Construction Estimating II.....	3

### Faculty Contact

[Daniel Iund](#)..... 763-576-4163  
[Mark Anderson](#)..... 763-576-4078  
[Dawn Wirtz](#)

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)  
 Also see: *Architectural Technology AAS, Architectural 2D CAD, and Construction Estimating certificate*



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### Program Information

The Anoka Technical College Architectural 2D CAD Drafting certificate is a 16-credit program that consists of technical courses designed to develop specific 2D CAD skills related to the fields of architecture, engineering, contracting, and other design-construction fields. Students receive hands-on training in industry standard computer-aided drafting software (AutoCAD).

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will demonstrate residential construction materials and methods knowledge.
- Students will demonstrate commercial construction materials and methods knowledge.
- Students will execute program/industry 2D CAD drafting standards for residential construction drawings.
- Students will execute program/industry 2D CAD drafting standards for commercial construction drawings.

### Course Prerequisites

None.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Graduates of the Architectural 2D CAD Drafting certificate program learn CAD skills which can be applied to the design-construction industry, including employment with architectural and engineering firms, residential builders, and construction material suppliers. Drafters who gain industry experience and knowledge many become design drafters or senior drafters. With additional training or experience, drafters may also move into related positions, such as specification writer, sales engineer, or CAD engineering assistant.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*

**\*\*Students who start in the spring will need more time to complete this program.**

**Limited first semester technical courses are offered in the spring semester.**

### Program Sequence

<b>Fall Semester</b> .....	<b>8</b>
<input type="checkbox"/> ARCH 1000 Residential Construction .....	2
<input type="checkbox"/> ARCH 1002 Construction Print Reading .....	2
<input type="checkbox"/> ARCH 1040 Residential Graphics.....	1
<input type="checkbox"/> ARCH 1043 Architectural CAD I .....	3
<b>Spring Semester.....</b>	<b>8</b>
<input type="checkbox"/> ARCH 1004 Introduction to the Architectural Profession .....	2
<input type="checkbox"/> ARCH 1015 Commercial Construction.....	2
<input type="checkbox"/> ARCH 1045 Commercial Graphics .....	1
<input type="checkbox"/> ARCH 1052 Architectural CAD II.....	3

### Faculty Contact

[Daniel Iund](#)..... 763-576-4163  
[Mark Anderson](#)..... 763-576-4078  
[Dawn Wirtz](#)

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**Also see: Architectural Technology AAS, Architectural and Construction Technician diploma and Construction Estimating certificate**



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### Program Information

The Anoka Technical College Construction Estimating certificate is a 26-credit program that consists of technical courses designed to develop skills relating to the field of construction cost estimating, quantity surveying and building materials. In addition to estimating skills, the student receive training in related areas such as plan reading, residential/commercial construction, specifications, construction scheduling and Computer Aided Drafting (CAD) software.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Construction Print Reading
- Residential construction materials estimating
- Commercial construction materials estimating
- Construction general conditions estimating
- Computer Estimating

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

### Graduation Requirements

All Anoka Technical College students seeking an Associate of Applied Science (AAS) degree, diploma or certification must meet the grade-point average (GPA) of 2.0 or higher. Please contact your advisor for any further program graduation requirements.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Graduates of the Construction Estimating certificate program learn skills and technology that can be applied to a wide variety of construction industry employers including construction subcontractors, lumber suppliers, home improvement centers and construction material suppliers.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*  
 \*\*Students who start in the spring will need more time to complete this program.  
 Limited first semester technical courses are offered in the Spring semester.

### Program Sequence

<b>Fall Semester</b> .....	<b>14</b>
<input type="checkbox"/> ARCH 1000 Residential Construction.....	2
<input type="checkbox"/> ARCH 1002 Construction Print Reading.....	2
<input type="checkbox"/> ARCH 1043 Architectural CAD I .....	3
<input type="checkbox"/> CEST 1000 Construction Estimating I.....	3
<input type="checkbox"/> CEST 1030 Project Management for Estimators .....	2
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication.....	2
<b>Spring Semester.....</b>	<b>12</b>
<input type="checkbox"/> ARCH 1015 Commercial Construction.....	2
<input type="checkbox"/> ARCH 1031 Building Systems .....	2
<input type="checkbox"/> CEST 1010 Construction Estimating II.....	3
<input type="checkbox"/> CEST 1020 Computer Estimating .....	2
<input type="checkbox"/> SPCH 1200 Interpersonal Communications .....	3

### Faculty Contact

[Daniel Iund](#)..... 763-576-4163  
[Mark Anderson](#)..... 763-576-4078  
[Dawn Wirtz](#)

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*Also see: Architectural Technology AAS, Architectural and Construction Technician diploma, and Architectural 2C CAD certificate*



## Program Information

The Anoka Technical College Construction Electrician diploma is an 82-credit program designed to develop skills in the installation and testing of electrical fixtures. Students will study wiring, including blueprint reading, wiring code, electrical theory and wiring laboratory. Many graduates of this program join unions to complete their apprenticeship training.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes, which, all outcomes are determined at a first year apprentice level:

- Work safely amongst others.
- Troubleshoot electrical circuits using proper technique.
- Design and install single family dwelling circuits to NEC standards.
- Design and install commercial and industry circuits to NEC standards.
- Design and install control circuits to NEC standards.
- Effectively follow verbal and written instructions.
- Identify code articles that pertain to the project.

## Accreditation/Certification

Minnesota Department of Labor and Industry  
 Two year Construction Electrician Program Approval

## Endorsements

The Construction Electrician diploma is approved by:

- State Board of Electricity
- Twin Cities Joint Apprenticeship Committee,
- Many unions in the upper Midwest including:
  - Local 110 (St. Paul)
  - Local 292 (Minneapolis)
  - Local 343 (Mankato)
  - Local 242 (Duluth)
  - Local 294 (Bemidji and Iron Range)
  - Local 1426 (Fargo, East Grand Forks and Grand Forks)
  - Local 426 (Sioux City, Sioux Falls, Colorado and Kansas)

## Course Prerequisites

Although no prior knowledge or experience is necessary to succeed in this program, prospective Construction Electrician students should have a high school diploma or GED. Helpful high school courses include electronics, drafting, carpentry, and algebra/trigonometry. Physical exertion is often required and electrical construction may be performed outdoors or under such conditions as heights, unfinished construction or high voltages.

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**ENGL 1107 Composition I** Prerequisite ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.

**MATH 1400 Algebra and Trigonometry** Prerequisite MATH 0801 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

As a construction electrician, program graduates will work with electrical materials on construction and remodeling jobs. More specifically, construction electricians plan, assemble, install and test electrical fixtures, apparatus and wiring that is used in both new and existing buildings. Construction electricians must have complete knowledge of electrical codes, theory and materials in order to correctly install and troubleshoot all types of electrical equipment and controls as required for each type of building.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

Experienced electricians who work for large companies have several options for advancement. Those who have good people skills may become supervisors. Those who have good organizational skills may become managers. Construction electricians may transfer to electrical jobs in the shipbuilding, automobile or aircraft industries. Some electricians start their own businesses. Those who have a master electrician’s license may become contractors.

## Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*

\*\*Students who start in the spring will need more time to complete this program.

## Program Sequence

<b>Fall Semester</b>	<b>19</b>
<input type="checkbox"/> ELEC 1002 Electrical Theory I	6
<input type="checkbox"/> ELEC 1021 Residential Wiring Lab I	5
<input type="checkbox"/> ELEC 1031 National Electrical Code I	3
<input type="checkbox"/> MATH 1400 Algebra and Trigonometry	5
<b>Spring Semester</b>	<b>18</b>
<input type="checkbox"/> ELEC 1062 Electrical Theory II	6
<input type="checkbox"/> ELEC 1081 Residential Wiring Lab II	6
<input type="checkbox"/> ELEC 1091 National Electrical Code II	3
<input type="checkbox"/> ELEC 1122 Electrical Heating & Air Conditioning	3
<b>Summer Semester</b>	<b>8</b>
<input type="checkbox"/> ELEC 1101 Power Limited	2
<input type="checkbox"/> ELEC 1110 Lighting	2
<input type="checkbox"/> ELEC 1130 Plan Reading	2
<input type="checkbox"/> ELEC 1142 Safety Principles/OSHA	2



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# Construction Electrician

Diploma

<b>Fall Semester</b> .....	<b>19</b>
<input type="checkbox"/> ELEC 2011 Commercial Wiring Lab I.....	5
<input type="checkbox"/> ELEC 2021 Motors and Controls I.....	2
<input type="checkbox"/> ELEC 2031 National Electrical Code III.....	3
<input type="checkbox"/> ELEC 2041 Three-Phase Electrical Theory.....	5
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<b>Spring Semester</b> .....	<b>18</b>
<input type="checkbox"/> ELEC 1108 PLC's for Electricians.....	3
<input type="checkbox"/> ELEC 2061 Commercial Wiring Lab II.....	6
<input type="checkbox"/> ELEC 2072 Motors and Controls II.....	3
<input type="checkbox"/> ELEC 2081 National Electrical Code IV.....	3
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3

### Faculty Contact

[Brian Schelkoph](mailto:Brian.Schelkoph@anokatech.edu)..... 763-576-4228

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

# Biomedical Equipment Technician (BMET)

Associate in Applied Science (AAS) Degree

Technical Requirements ..... 57  
 MnTC General Education ..... 15  
 Total Credits ..... 72

## Program Information

The Anoka Technical College Biomedical Equipment Technician (BMET) program is a 72-credit Associate of Applied Science (AAS) degree that includes technical and general education components. This degree provides the skills for working in hospitals, manufacturing, and field service plus the possibility to pursue a Bachelor of Arts (BA) degree with cooperating colleges and universities. Full time students can obtain an applied associate science degree in two years. Financial assistance is available for those who qualify and there are several BMET program-specific scholarships available.

Designed by biomedical and manufacturing industry leaders, the program provides a comprehensive, hands-on, career-oriented curriculum. Students will obtain a solid education in biomedical devices/industry fundamentals, electronic engineering fundamentals, computer/networking fundamentals.

Biomedical technicians play a vital role in health care, enhancing the user experience by ensuring all medical equipment is safe and in proper working condition. Technicians inspect, calibrate, maintain, and repair diagnostic equipment, monitoring equipment, therapeutic and life-saving medical equipment (defibrillators, ventilators, drug delivery pumps, CT and MRI Scanners, and more) found in hospitals, medical clinics, imaging centers and medical device companies.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Interpersonal and employability skills: Communicate with peers and customers using professional, ethical and appropriate verbal and nonverbal communication skills; by accepting constructive feedback and displaying appropriate behavior; participating as a member of a team, exhibiting leadership and lifelong learning skills.
- Electronic Theory: Demonstrate a solid understanding of electronics; by interpreting electronic schematics and diagrams; research, organize and interpret information from various technical sources; identifying components; electronic test equipment used by technician in industry.
- Biomedical Systems: Convey the understanding of complex relationships between sections of specialized equipment through written, verbal, and/or demonstrative methods.
- Troubleshooting: Demonstrate principles of troubleshooting and logical diagnosis by using critical thinking skills to define, analyze, and implement a solution.
- Biomedical Applications: Evaluate and determine that all biomedical equipment is in proper working condition, ensuring a safe, reliable health care environment.
- Safety Compliance: Participate in class in a professional manner, by acting in compliance with documented safety procedures and appropriate industry standards.
- Test Equipment: Demonstrate solid understanding of test equipment used by technicians in the health care industry.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**MATH 1550 Introduction to Statistics** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

In today’s health care market, technology is paramount. The need for a workforce knowledgeable in the theory of operation, underlying physiological principles, and safe application of biomedical equipment is a central concern of many hospitals and companies.

The BMET is a skilled technician that demonstrates the knowledge to ensure a safe, reliable health care environment. Referenced from International Certification Commission (ICC) handbook <http://www.aami.org/certification/>

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*  
 \*\*Students who start in the spring will need more time to complete this program.  
 Limited first semester technical courses are offered in the Spring semester.

## Program Sequence

<b>Fall Semester</b> .....	<b>16</b>
<input type="checkbox"/> ETEC 1102 Mechatronics 1 DC .....	3
<input type="checkbox"/> ETEC 1113 Mechatronics 2 AC .....	3
<input type="checkbox"/> ETEC 1141 Circuit Analysis 1 .....	4
<input type="checkbox"/> ETEC 1151 Computer Troubleshooting A+ .....	3
<input type="checkbox"/> ETEC 1250 Digital 1 .....	3
<b>Spring Semester</b> .....	<b>16</b>
<input type="checkbox"/> BMET 1301 Biomedical Networking.....	2
<input type="checkbox"/> ETEC 1170 Programmable Logic Controllers (PLCs).....	2
<input type="checkbox"/> ETEC 1202 Solid State Electronic Devices.....	5
<input type="checkbox"/> ETEC 1260 Lasers and Optics.....	2



(continued)

2021-2022

# Biomedical Equipment Technician (BMET)

Associate of Applied Science (AAS) Degree

<input type="checkbox"/>	ETEC 1271	Technical Documentation .....	3
<input type="checkbox"/>	ETEC 1281	Engineering Technology Programming: LabVIEW and C++ .....	2
<b>Summer Semester .....</b>			<b>7</b>
<input type="checkbox"/>	MATH 1550	Introduction to Statistics .....	4
<input type="checkbox"/>	SPCH 1200	Interpersonal Communication .....	3
<b>Fall Semester .....</b>			<b>16</b>
<input type="checkbox"/>	BMED 2100*	Design & Manufacturing in Medical Device Industry .....	3
<input type="checkbox"/>	BMED 2300*	Introduction to Quality Assurance .....	3
<input type="checkbox"/>	BMET 1200	Biomedical Equipment and Terminology .....	2
<input type="checkbox"/>	ETEC 2138	LabVIEW and Data Acquisition .....	4
<input type="checkbox"/>	ETEC 2276	Industrial Networking IOT/M2M.....	4
<b>Spring Semester.....</b>			<b>17</b>
<input type="checkbox"/>	BIOL 1104*	The Human Body-Structure & Function .....	4
<b>OR</b>			
<input type="checkbox"/>	BIOL 1130	Human Biology .....	4
<input type="checkbox"/>	BMED 2200	*Introduction to Medical Device Regulations/Ethics.....	3
<input type="checkbox"/>	BMET 2012	Biomedical Instrumentation.....	4
<input type="checkbox"/>	ETEC 2011	Machine-to-Machine Wireless Communications	2
<input type="checkbox"/>	<u>MnTC</u>	General Education Elective .....	4

\* Evening courses taken at Anoka-Ramsey Community College

### Faculty Contact

<a href="#">Tom Reid</a> .....	763-576-4139
<a href="#">Daniel Truchon</a> .....	763-576-4185

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Robotic and Electronic Engineering Technology AAS and Electronic Technology diploma*

**Program Information**

The Anoka Technical College Electronic Engineering Technology (EET) program offers a 72-credit Robotic and Electronic Engineering Technology Associate of Applied Science (AAS) degree that prepares students to work with mechatronics, robotics, automation and controls, computer servicing/networking, and biomedical equipment.

Students gain a thorough understanding of how computers and machines communicate as well as system level troubleshooting, plus a solid education in electronic engineering technology fundamentals.

Students will also learn about:

- Mechatronics
- Lasers and Optics
- Robotics
- Computer Troubleshooting A+
- Networking
- Programmable Logic Controllers (PLCs)
- LabVIEW programming applications
- Motor Control
- Microcontrollers
- Advanced Troubleshooting
- Project Management
- Interpersonal Skills, such as customer service and teamwork

Designed by electronic engineering industry leaders, the program provides a comprehensive, hands-on, career-oriented curriculum. Students will obtain a solid education in electronic engineering fundamentals, mechatronics, robotics, automation and controls, computer servicing/networking and Biomedical Equipment Technician (BMET). Full time students can obtain an Electronic Technician diploma in two semesters, and an associate applied science degree in four semesters. Financial assistance is available for those who qualify and there are several EET program-specific scholarships available.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Interpersonal and employability skills: Communicate with peers and customers using professional, ethical and appropriate verbal and nonverbal communication skills; by accepting constructive feedback and displaying appropriate behavior; participating as a member of a team, exhibiting leadership and lifelong learning skills.
- Electronic Theory: Demonstrate a solid understanding of electronics; by interpreting electronic schematics and diagrams; research, organize and interpret information from various technical sources; identifying components; electronic test equipment used by technician in industry.
- Mechatronic Systems: Convey the understanding of complex relationships between sections of specialized equipment through written, verbal, and/or demonstrative methods.
- Troubleshooting: Demonstrate principles of troubleshooting and logical diagnosis by using critical thinking skills to define, analyze, and implement a solution.

- Mechatronic Applications: Evaluate and determine that all mechatronic equipment is in proper working condition, ensuring a safe, reliable manufacturing environment.
- Safety Compliance: Participate in class in a professional manner, by acting in compliance with documented safety procedures and appropriate industry standards.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**MATH 1550 Introduction to Statistics** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

For students who want to continue their education and obtain their four-year degree, the Electronic Engineering Technology (EET) program has articulation agreements with Minnesota State University (Mankato), Minnesota State University (Moorhead), Bemidji State University, and University of Minnesota Crookston. Students can complete most of these four-year degrees through online courses.

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

As part of the Electronic Engineering Technology (EET) program, Robotic and Electronic Engineering Technology (EET) Associate of Applied Science (AAS) degree provides students with the technical knowledge and practical experience necessary for an exciting career in electronics, mechatronics, robotics, automation and controls, computer servicing/networking, Biomedical Equipment Technician (BMET) and engineering support.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

**Start Dates**

Fall Semester.....August

Spring Semester .....January\*\*

\*\*Students who start in the spring will need more time to complete this program.

Limited first semester technical courses are offered in the Spring semester.



A member of Minnesota State

[AnokaTech.edu](http://AnokaTech.edu)

# Robotic and Electronic Engineering Technology

Associate of Applied Science (AAS) Degree

## Program Sequence

<b>Fall Semester</b>	<b>16</b>
<input type="checkbox"/> ETEC 1102 Mechatronics 1 DC	3
<input type="checkbox"/> ETEC 1113 Mechatronics 2 AC	3
<input type="checkbox"/> ETEC 1141 Circuit Analysis 1	4
<input type="checkbox"/> ETEC 1151 Computer Troubleshooting A+	3
<input type="checkbox"/> ETEC 1250 Digital 1	3
<b>Spring Semester</b>	<b>16</b>
<input type="checkbox"/> BMET 1301 Biomedical Networking	2
<input type="checkbox"/> ETEC 1170 Programmable Logic Controllers (PLCs)	2
<input type="checkbox"/> ETEC 1202 Solid State Electronic Devices	5
<input type="checkbox"/> ETEC 1260 Lasers and Optics	2
<input type="checkbox"/> ETEC 1271 Technical Documentation	3
<input type="checkbox"/> ETEC 1281 Engineering Technology Programming: LabVIEW and C++	2
<b>Summer Semester</b>	<b>7</b>
<input type="checkbox"/> MATH 1550 Introduction to Statistics	4
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a>	3
<b>Fall Semester</b>	<b>16</b>
<input type="checkbox"/> ETEC 2138 LabVIEW and Data Acquisition	4
<input type="checkbox"/> ETEC 2143 Advanced Programmable Logic Controllers (PLCs)	3
<input type="checkbox"/> ETEC 2162 Robotics and Automation Controls	5
<input type="checkbox"/> ETEC 2276 Industrial Networking IOT/M2M	4
<b>Spring Semester</b>	<b>17</b>
<input type="checkbox"/> ETEC 2011 Machine-to-Machine Wireless Communications	2
<input type="checkbox"/> ETEC 2172 Mechatronics Capstone Project	5
<input type="checkbox"/> ETEC 2177 Mechatronics Capstone Design and Documentation	2
<input type="checkbox"/> MnTC General Education Elective	8

## Faculty Contact

[Tom Reid](#)..... 763-576-4139  
[Daniel Truchon](#)..... 763-576-4185

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Biomedical Equipment Technician AAS and Electronic Technology diploma*

# Special Electronics Technician

Emphasis

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 57  
 MnTC General Education ..... 15  
 Total Credits ..... 72

## Program Information

The Anoka Technical Electronic Engineering Technology (EET) program includes a 72-credit Special Electronics Technician Associate of Applied Science (AAS) degree emphasis program that prepares students in core electronic engineering technology skills, as well as a broad background in computer support and networking.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Interpersonal and employability skills: Communicate with peers and customers using professional, ethical and appropriate verbal and nonverbal communication skills; by accepting constructive feedback and displaying appropriate behavior; participating as a member of a team, exhibiting leadership and lifelong learning skills.
- Electronic Theory: Demonstrate a solid understanding of electronics; by interpreting electronic schematics and diagrams; research, organize and interpret information from various technical sources; identifying components; electronic test equipment used by technician in industry.
- Mechatronic Systems: Convey the understanding of complex relationships between sections of specialized equipment through written, verbal, and/or demonstrative methods.
- Troubleshooting: Demonstrate principles of troubleshooting and logical diagnosis by using critical thinking skills to define, analyze, and implement a solution.
- Mechatronic Applications: Evaluate and determine that all mechatronic equipment is in proper working condition, ensuring a safe, reliable manufacturing environment.
- Safety Compliance: Participate in class in a professional manner, by acting in compliance with documented safety procedures and appropriate industry standards.

## Admission Requirements

This program requires instructor approval.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**MATH 1550 Introduction to Statistics** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer:](#)
- [Anoka Technical College transfer student](#)

## Industry Information

As part of the Electronic Engineering Technology (EET) program, the Special Electronics Technician (EET) emphasis Associate of Applied Science (AAS) degree provides students with the technical knowledge and practical experience necessary for an exciting career in electronics, mechatronics, robotics, automation and controls, computer servicing/networking, biomedical equipment technician (BMET) and engineering support.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*  
 \*\*Students who start in the spring will need more time to complete this program.  
 Limited first semester technical courses are offered in the Spring semester.

## MnTC Requirements

Fifteen (15) credits of general education credits from the [Minnesota Transfer Curriculum \(MnTC\)](#) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.  
 Note: Some of the MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.

## Program Sequence

<b>Fall Semester</b> .....	<b>16</b>
<input type="checkbox"/> ETEC 1102 Mechatronics 1 DC .....	3
<input type="checkbox"/> ETEC 1113 Mechatronics 2 AC .....	3
<input type="checkbox"/> ETEC 1141 Circuit Analysis 1 .....	4
<input type="checkbox"/> ETEC 1151 Computer Troubleshooting A+ .....	3
<input type="checkbox"/> ETEC 1250 Digital 1 .....	3
<b>Spring Semester</b> .....	<b>16</b>
<input type="checkbox"/> BMET 1301 Biomedical Networking .....	2
<input type="checkbox"/> ETEC 1170 Programmable Logic Controllers (PLCs).....	2
<input type="checkbox"/> ETEC 1202 Solid State Electronic Devices.....	5
<input type="checkbox"/> ETEC 1260 Lasers and Optics.....	2
<input type="checkbox"/> ETEC 1271 Technical Documentation .....	3
<input type="checkbox"/> ETEC 1281 Engineering Technology Programming: LabVIEW and C++ .....	2
<b>Summer Semester</b> .....	<b>7</b>
<input type="checkbox"/> MATH 1550 Introduction to Statistics .....	4
<input type="checkbox"/> MnTC General Education Elective .....	3
<b>Special Electronics Technician Electives</b> .....	<b>25</b>

## Faculty Contact

[Tom Reid](#)..... 763-576-4139  
[Daniel Truchon](#)..... 763-576-4185

For information on how to apply or schedule a tour, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

Also see: *Biomedical Equipment Technician AAS, Robotic and Electronic Engineering Technology AAS and Electronic Technology diploma*



## Program Information

The Anoka Technical Electronic Engineering Technology (EET) program includes a 32-credit Electronic Technology diploma that provides students with the technical knowledge necessary to start a career in electronics.

Full-time students may complete an Electronic Technology diploma in two semesters. Full-time students who continue in the program can obtain an AAS degree in Electronic Engineering Technology (EET) with an additional two semesters. Students will obtain a solid education in electronic fundamentals, as well as system-level troubleshooting.

Students also learn about:

- Computer Troubleshooting A+
- LabVIEW programming applications
- Lasers and Optics
- Mechatronics
- Networking
- Programmable Logic Controllers (PLCs)
- Robotics

Financial assistance is available for those who qualify and there are several EET program-specific scholarships available.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Interpersonal and employability skills: Communicate with peers and customers using professional, ethical and appropriate verbal and nonverbal communication skills; by accepting constructive feedback and displaying appropriate behavior; participating as a member of a team, exhibiting leadership and lifelong learning skills.
- Electronic Theory: Demonstrate a solid understanding of electronics; by interpreting electronic schematics and diagrams; research, organize and interpret information from various technical sources; identifying components; electronic test equipment used by technician in industry.
- Mechatronic Systems: Convey the understanding of complex relationships between sections of specialized equipment through written, verbal, and/or demonstrative methods.
- Troubleshooting: Demonstrate principles of troubleshooting and logical diagnosis by using critical thinking skills to define, analyze, and implement a solution.
- Mechatronic Applications: Evaluate and determine that all mechatronic equipment is in proper working condition, ensuring a safe, reliable manufacturing environment.
- Safety Compliance: Participate in class in a professional manner, by acting in compliance with documented safety procedures and appropriate industry standards.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

As part of the Electronic Engineering Technology program, the Electronic Technology diploma provides students with the technical knowledge necessary to start their career in electronics and manufacturing support.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
 Spring Semester .....January\*\*  
 \*\*Students who start in the spring will need more time to complete this program.  
 Limited first semester technical courses are offered in the Spring semester.

## Program Sequence

<b>Fall Semester</b> .....	<b>16</b>
<input type="checkbox"/> ETEC 1102 Mechatronics 1 DC .....	3
<input type="checkbox"/> ETEC 1113 Mechatronics 2 AC .....	3
<input type="checkbox"/> ETEC 1141 Circuit Analysis 1 .....	4
<input type="checkbox"/> ETEC 1151 Computer Troubleshooting A+ .....	3
<input type="checkbox"/> ETEC 1250 Digital 1 .....	3
<b>Spring Semester</b> .....	<b>16</b>
<input type="checkbox"/> BMET 1301 Biomedical Networking.....	2
<input type="checkbox"/> ETEC 1170 Programmable Logic Controllers (PLCs).....	2
<input type="checkbox"/> ETEC 1202 Solid State Electronic Devices.....	5
<input type="checkbox"/> ETEC 1260 Lasers and Optics.....	2
<input type="checkbox"/> ETEC 1271 Technical Documentation .....	3
<input type="checkbox"/> ETEC 1281 Engineering Technology Programming: LabVIEW and C++ .....	2

## Faculty Contact

[Tom Reid](#)..... 763-576-4139  
[Daniel Truchon](#)..... 763-576-4185

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)  
 Also see: *Biomedical Equipment Technician AAS and Robotic and Electronic Engineering Technology AAS*



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[AnokaTech.edu](http://AnokaTech.edu)

## Program Information

The CNC Design & Manufacturing Technology associate of Applied Science (AAS) is a 69-credit degree program which includes technical and general education components to provide the skills for trade entry plus the possibility to pursue a Bachelor of Arts (BA) degree with cooperating colleges and universities.

The CNC Manufacturing Technology degree program prepares people to write and edit CNC programs, perform complex setups, basic troubleshooting of machine problems, cycle time reduction practices, fixture design and building, recognize areas for process improvements and operate the following equipment: manual lathes, grills mills, grinders, CNC programming, CNC mills, CNC lathes, coordinate measuring machine, CAD/CAM and 4&5 axis CNC mills.

Graduates are also skilled in the areas of basic troubleshooting of machine problems, cycle time reduction practices, fixture design and building, blueprint reading, GD&T, statistical process control, lean manufacturing, math, inspection and the correct sequence of operation required. Graduates may also be skilled in the areas of tool and cutter, CNC wire EDM and CNC sinker EDM, and CNC parametric programming depending on elective taken.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- The student will demonstrate machine skills and practices consistent with the manufacturing industry.
- Exhibit safety principles and practices in a manufacturing environment.
- Communicate effective use of machine shop theory and process terminology.
- Work efficiently as a member in a machine shop environment to manage time and meet project deadlines.
- Work effectively as a member of a team while accepting constructive criticism.

## Course Prerequisites

Although no prior knowledge or experience is necessary to succeed in this program, a background in shop math and algebra, mechanical drafting, machine shop and mechanical skills can be helpful.

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**ENGL 1107 Composition I** Prerequisites ENGL 0102 or 0960 and READ 0900 or 0960 or appropriate test score.

**MATH 1650 College Trigonometry** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

The machinist is a skilled metal worker who produces metal parts by using machine tools and hand tools. Training and experience enable the machinist to plan and carry through all the operations needed to turn out a finished machine product and to switch readily from one kind of product to another. The machinist’s background and knowledge enables him/her to turn a block of metal into an intricate, precise part.

All options are an art as well as a skill, and are considered to be demanding occupations. There is a great variety in the construction of dies and molds, depending on the design of a part, the type of materials used, the ingenuity of the designer, and the knowledge and skill of the die and mold maker, who must machine intricate components of various tooling to tolerances expressed in fractions of one-thousandths of an inch.

Employees in this position are expected to write and edit CNC programs, perform complex setups, basic troubleshooting of machine problems, cycle time reduction practices, fixture design and building and recognize areas for process improvements on manual lathes, drills, mills, grinders, CNC mills, CNC lathes, CNC wire EDM and CNC sinker EDM, coordinate measuring machine, and CAD/CAM. Employees are also expected to invoke lean manufacturing process and practices.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
 Spring Semester.....January

## Program Sequence

<b>First Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 1101 Milling .....	4
<input type="checkbox"/> MACH 1106 Lathe .....	3
<input type="checkbox"/> MACH 1121 Metrology .....	2
<input type="checkbox"/> MACH 1132 Blueprint Reading .....	3
<input type="checkbox"/> MACH 1140 CAD I .....	1
<input type="checkbox"/> MATH 1650 College Trigonometry .....	3
<b>Second Semester</b> .....	<b>18</b>
<input type="checkbox"/> MACH 1200 Advanced Machining.....	3
<input type="checkbox"/> MACH 1220 Grinding.....	2
<input type="checkbox"/> MACH 1231 Blueprint Design/ CAD II .....	1
<input type="checkbox"/> MACH 1240 Geometric Dimensioning & Tolerancing .....	3
<input type="checkbox"/> MACH 1251 CNC Machining.....	3



(continued)

2021-2022

# CNC Design & Manufacturing Technology

Associate of Applied Science (AAS) Degree

<input type="checkbox"/> MACH 1261 CNC Programming I.....	3
<input type="checkbox"/> MACH 1275 Quality Standards .....	1
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	2
<b>Third Semester .....</b>	<b>16</b>
<input type="checkbox"/> MACH 2310 CNC Milling.....	3
<input type="checkbox"/> MACH 2320 CNC Turning .....	3
<input type="checkbox"/> MACH 2331 CAM .....	1
<input type="checkbox"/> MACH 2340 CNC Programming II .....	2
<input type="checkbox"/> MACH 2351 Mold/Die Making Theory.....	3
<input type="checkbox"/> MACH 2360 Fixture and Tooling .....	4
<b>Fourth Semester .....</b>	<b>19</b>
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<input type="checkbox"/> MACH 2451 CNC Design and Manufacture .....	3
<input type="checkbox"/> MACH 2462 Multi-Axis Milling .....	3
<input type="checkbox"/> MACH 2472 Multi-Axis Turning.....	3
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	6

### Faculty Contact

<a href="#">Brendon Paulson</a> .....	763-576-4243
<a href="#">Matt Rogers</a> .....	763-576-4088
<a href="#">Jerry Showalter</a> .....	763-576-4043
<a href="#">Jesse Oldenburg</a> .....	763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Advanced CNC Machine Technology diploma and Machine Technology Certificates 1, 2, and 3*

### Program Information

The Anoka Technical College Advanced CNC Machine Technology diploma is a 64-credit program that includes technical and general education components. The career major prepares students to write and edit CNC programs, perform complex setups, basic troubleshooting of machine problems, cycle time reduction practices, fixture design and building, recognize areas for process improvements and operate the following equipment: manual lathes, drills, mills, grinders, CNC mills, CNC lathes, CNC wire EDM and CNC sinker EDM, coordinate measuring machine, CAD/CAM and 4&5 axis CNC mills.

Program graduates are skilled in the areas of CNC programming, parametric programming, basic troubleshooting of machine problems, cycle time reduction practices, fixture design and building, blueprint reading, GD&T, statistical process control, lean manufacturing, math, inspection and the correct sequence of operation required.

Those employed in this position are expected to write and edit CNC programs, perform complex setups, basic troubleshoot of machine problems, cycle time reduction practices, fixture design and building and recognize areas for process improvements on manual lathes, drills, mills, grinders, CNC mills, CNC lathes, CNC wire EDM and CNC sinker EDM, coordinate measuring machine and CAD/CAM. Employees are also expected to invoke lean manufacturing process and practices.

The CNC Manufacturing Technology program provides the skills for trade entry plus the possibility to pursue a Bachelor of Arts (BA) degree with cooperating colleges and universities.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

Write and edit CNC programs

- Perform complex setups
- Basic troubleshooting of machine problems
- Cycle time reduction practices
- Fixture design and building
- Recognize areas for process improvements

### Course Prerequisites

Although no prior knowledge or experience is necessary to succeed in this program, a background in shop math and algebra, mechanical drafting, machine shop and mechanical skills can be helpful.

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**MACH 1171 Math for Machinist I** Prerequisites MATH 0801 or appropriate test score.

**MATH 1650 College Trigonometry** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The machinist is a skilled metal worker who produces metal parts by using machine tools and hand tools. Training and experience enable the machinist to plan and carry through all the operations needed to turn out a finished machine product and to switch readily from one kind of product to another. The machinist’s background and knowledge enables him/her to turn a block of metal into an intricate, precise part.

All options are an art as well as a skill, and are considered to be demanding occupations. There is a great variety in the construction of dies and molds, depending on the design of a part, the type of materials used, the ingenuity of the designer, and the knowledge and skill of the die and mold maker, who must machine intricate components of various tooling to tolerances expressed in fractions of one-thousandths of an inch.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Program Sequence

<b>First Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 1101 Milling .....	4
<input type="checkbox"/> MACH 1106 Lathe .....	3
<input type="checkbox"/> MACH 1121 Metrology .....	2
<input type="checkbox"/> MACH 1132 Blueprint Reading .....	3
<input type="checkbox"/> MACH 1140 CAD I .....	1
<input type="checkbox"/> MACH 1171 Math for Machinist .....	3
OR	
<input type="checkbox"/> MATH 1650 College Trigonometry .....	3
<b>Second Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 1200 Advanced Machining.....	3
<input type="checkbox"/> MACH 1220 Grinding.....	2
<input type="checkbox"/> MACH 1231 Blueprint Design/ CAD II .....	1
<input type="checkbox"/> MACH 1240 Geometric Dimensioning & Tolerancing .....	3
<input type="checkbox"/> MACH 1251 CNC Machining.....	3



# Advanced CNC Machine Technology

Diploma

<input type="checkbox"/>	MACH 1261 CNC Programming I.....	3
<input type="checkbox"/>	MACH 1275 Quality Standard.....	1
<b>Third Semester .....</b>		<b>16</b>
<input type="checkbox"/>	MACH 2310 CNC Milling.....	3
<input type="checkbox"/>	MACH 2320 CNC Turning.....	3
<input type="checkbox"/>	MACH 2331 CAM .....	1
<input type="checkbox"/>	MACH 2340 CNC Programming II.....	2
<input type="checkbox"/>	MACH 2351 Mold/Die making Theory.....	3
<input type="checkbox"/>	MACH 2360 Fixture and Tooling.....	4
<b>Fourth Semester .....</b>		<b>16</b>
<input type="checkbox"/>	MACH 2411 Tool and Cutter Grinding.....	2
<input type="checkbox"/>	MACH 2420 EDM Machining.....	2
<input type="checkbox"/>	MACH 2435 Swiss Machining.....	2
<input type="checkbox"/>	MACH 2440 CNC Programming III.....	1
<input type="checkbox"/>	MACH 2451 CNC Design and Manufacture.....	3
<input type="checkbox"/>	MACH 2462 Multi-Axis Milling.....	3
<input type="checkbox"/>	MACH 2472 Multi-Axis Turning.....	3

### Faculty Contact

<a href="#">Matt Rogers</a> .....	763-576-4088
<a href="#">Brendon Paulson</a> .....	763-576-4243
<a href="#">Jerry Showalter</a> .....	763-576-4043
<a href="#">Jesse Oldenburg</a> .....	763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: CNC Design & Manufacturing Technology AAS and Machine Technology Certificate 1, 2, and 3*



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**Program Information**

The Anoka Technical College Machine Technology Certificate 1 is a 16-credit program that prepares students for entry level skills to set up and operate the following equipment: manual lathes, drill, mills and grinders. Program graduates are skilled in the areas of blueprint reading, math and inspection.

Machinists working in this field are expected to set up and operate manual lathes, drills, mills and grinders. They are able to inspect and produce parts to the desired dimensions under proper supervision.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- The student will demonstrate machine skills and practices consistent with the manufacturing industry.
- Exhibit safety principles and practices in a manufacturing environment.
- Communicate effective use of machine shop theory and process terminology.
- Work efficiently as a member in a machine shop environment to manage time and meet project deadlines.
- Work effectively as a member of a team while accepting constructive criticism.

**Course Prerequisites**

Although no prior knowledge or experience is necessary to succeed in this program, a background in shop math and algebra, mechanical drafting, machine shop and mechanical skills can be helpful.

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**MACH 1171 Math for Machinist I** Prerequisites MATH 0801 or appropriate test score.

**MATH 1650 College Trigonometry** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

**Industry Information**

The machinist is a skilled metal worker who produces metal parts by using machine tools and hand tools. Training and experience enable the machinist to plan and carry through all the operations needed to turn out a finished machine product and to switch readily from one kind of product to another. The machinist's background and knowledge enables him/her to turn a block of metal into an intricate, precise part.

All options are an art as well as a skill, and are considered to be demanding occupations. There is a great variety in the construction of dies and molds, depending on the design of a part, the type of materials used, the ingenuity of the designer, and the knowledge and skill of the die and mold maker, who must machine intricate components of various tooling to tolerances expressed in fractions of one-thousandths of an inch.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

**Start Dates**

Fall Semester.....August  
Spring Semester.....January

**Program Sequence**

<b>First Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 1101 Milling .....	4
<input type="checkbox"/> MACH 1106 Lathe .....	3
<input type="checkbox"/> MACH 1121 Metrology .....	2
<input type="checkbox"/> MACH 1132 Blueprint Reading .....	3
<input type="checkbox"/> MACH 1140 CAD .....	1
<input type="checkbox"/> MACH 1171 Math for Machinist .....	3
<b>OR</b>	
<input type="checkbox"/> MATH 1650 College Trigonometry .....	3

**Faculty Contact**

<a href="#">Brendon Paulson</a> .....	763-576-4243
<a href="#">Matt Rogers</a> .....	763-576-4088
<a href="#">Jerry Showalter</a> .....	763-576-4043
<a href="#">Jesse Oldenburg</a> .....	763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: CNC Design & Manufacturing Technology AAS, Advanced CNC Machine Technology diploma and Machine Technology Certificate 2 and 3*

### Program Information

The Anoka Technical College Machine Technology Certificate 2 is a 16-credit program that prepares students with mid-level skills to set up and operate the following equipment: manual mills, lathes and surface grinding. Inputting of programs, offsets and the use of cutter compensation on CNC mills and lathes are also covered.

Program graduates are skilled in the areas of solid modeling and blueprint generation, GD&T, statistical process control, math and advanced inspection practices.

Graduates working in this field are expected to perform basic setup and operation of manual and CNC lathes, mills and grinders. They are able to inspect and produce parts to the desired dimensions, with proper supervision.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- The student will demonstrate machine skills and practices consistent with the manufacturing industry.
- Exhibit safety principles and practices in a manufacturing environment.
- Communicate effective use of machine shop theory and process terminology.
- Work efficiently as a member in a machine shop environment to manage time and meet project deadlines.
- Work effectively as a member of a team while accepting constructive criticism.

### Admission Requirements

Must successfully complete Machine Technology certificate 1.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The machinist is a skilled metal worker who produces metal parts by using machine tools and hand tools. Training and experience enable the machinist to plan and carry through all the operations needed to turn out a finished machine product and to switch readily from one kind of product to another. The machinist’s background and knowledge enables him/her to turn a block of metal into an intricate, precise part.

All options are an art as well as a skill, and are considered to be demanding occupations. There is a great variety in the construction of dies and molds, depending on the design of a part, the type of materials used, the ingenuity of the designer, and the knowledge and skill of the die and mold maker, who must machine intricate components of various tooling to tolerances expressed in fractions of one-thousandths of an inch.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Program Sequence

<b>Second Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 1200 Advanced Machining.....	3
<input type="checkbox"/> MACH 1220 Grinding.....	2
<input type="checkbox"/> MACH 1231 Blueprint Design/ CAD II .....	1
<input type="checkbox"/> MACH 1240 Geometric Dimensioning & Tolerancing .....	3
<input type="checkbox"/> MACH 1251 CNC Machining.....	3
<input type="checkbox"/> MACH 1261 CNC Programming I.....	3
<input type="checkbox"/> MACH 1275 Quality Standard.....	1

### Faculty Contact

<a href="#">Matt Rogers</a> .....	763-576-4088
<a href="#">Brendon Paulson</a> .....	763-576-4243
<a href="#">Jerry Showalter</a> .....	763-576-4043
<a href="#">Jesse Oldenburg</a> .....	763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: CNC Design & Manufacturing Technology AAS, Advanced CNC Machine Technology diploma and Machine Technology certificate 1 and 3*



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### Program Information

The Anoka Technical College Machine Technology Certificate 3 is a 16-credit program that prepare students for entry-level positions to operate and perform offset changes, as well as basic setups on the following equipment: CNC mills, CNC lathes, coordinate measuring machine and CAD/CAM.

Program graduates are skilled in the areas of blueprint reading, GD&T, statistical process control, lean manufacturing, math, inspection and the correct sequence of operation.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- The student will demonstrate machine skills and practices consistent with the manufacturing industry.
- Exhibit safety principles and practices in a manufacturing environment.
- Communicate effective use of machine shop theory and process terminology.
- Work efficiently as a member in a machine shop environment to manage time and meet project deadlines.
- Work effectively as a member of a team while accepting constructive criticism.

### Admission Requirements

Must successfully complete Machine Technology certificate 2.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The machinist is a skilled metal worker who produces metal parts by using machine tools and hand tools. Training and experience enable the machinist to plan and carry through all the operations needed to turn out a finished machine product and to switch readily from one kind of product to another. The machinist’s background and knowledge enables him/her to turn a block of metal into an intricate, precise part.

All options are an art as well as a skill, and are considered to be demanding occupations. There is a great variety in the construction of dies and molds, depending on the design of a part, the type of materials used, the ingenuity of the designer, and the knowledge and skill of the die and mold maker, who must machine intricate components of various tooling to tolerances expressed in fractions of one-thousandths of an inch.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Program Sequence

<b>Third Semester</b> .....	<b>16</b>
<input type="checkbox"/> MACH 2310 CNC Milling .....	3
<input type="checkbox"/> MACH 2320 CNC Turning .....	3
<input type="checkbox"/> MACH 2331 CAM .....	1
<input type="checkbox"/> MACH 2340 CNC Programing II.....	2
<input type="checkbox"/> MACH 2351 Mold/Die Making Theory .....	3
<input type="checkbox"/> MACH 2360 Fixture and Tooling.....	4

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Faculty Contact

<a href="#">Matt Rogers</a> .....	763-576-4088
<a href="#">Brendon Paulson</a> .....	763-576-4243
<a href="#">Jerry Showalter</a> .....	763-576-4043
<a href="#">Jesse Oldenburg</a> .....	763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: CNC Design & Manufacturing Technology AAS, Advanced CNC Machine Technology diploma and Machine Technology certificate 1 and 2*



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**Program Information**

The Computer Numeric Controlled (CNC) Service Technician program is a 64-credit diploma that includes technical and general education components. This diploma provides the skills for working in the manufacturing sector or as a field service technician. Full-time students can obtain a diploma in two years. Financial assistance is available for those who qualify.

CNC Service Technicians play a vital role in maintaining and servicing industrial equipment. Technicians inspect, calibrate, maintain, and repair equipment.

Designed by manufacturing industry leaders, the program provides a comprehensive, hands-on, career-oriented curriculum. Students will obtain a solid education in machine repair, industry fundamentals, and electronic fundamentals.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Demonstrate and practice maintenance skills consistent with industry expectations.
- Exhibit safety principles and practices in a manufacturing environment.
- Develop critical and creative thinking processes required to effectively and efficiently diagnose and repair technical problems.
- Develop and demonstrate knowledge, skills, and attitudes essential to an individual company's expectations.
- Demonstrate efficient interpersonal skills with customers, machine operators, and co-workers.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**ENGL 2105 Business and Technical Writing** Prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

Positions in this field may be either on-site or field service personnel involving highly technical repair and maintenance of Computer Numeric Controlled (CNC) machine and robotic automation equipment. Automation in manufacturing perpetuates an increased need for highly skilled technicians. Equipment serviced is encompassed by many sectors of manufacturing and may require background checks and proof of citizenship for entry into facilities including International Traffic in Arms Regulations (ITAR) as well as non-disclosure agreements and intellectual property protections. Field service may also involve varying amounts of travel to and from client sites.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

**Start Dates**

Fall Semester.....August  
Spring Semester.....January

**Program Sequence**

<b>First Semester</b> .....	<b>17</b>
<input type="checkbox"/> ETEC 1102 Mechatronic 1 DC .....	3
<input type="checkbox"/> ETEC 1113 Mechatronic 2 AC.....	3
<input type="checkbox"/> ETEC 1141 Circuit Analysis .....	4
<input type="checkbox"/> ETEC 1250 Digital I.....	3
<input type="checkbox"/> MAIN 1100 Pneumatic & Hydraulics.....	4
<b>Second Semester</b> .....	<b>15</b>
<input type="checkbox"/> ETEC 1170 Programmable Logic Controllers (PLCs).....	2
<input type="checkbox"/> ETEC 1202 Solid State Electronic Devices.....	5
<input type="checkbox"/> MACH 1261 CNC Programming 1 .....	3
<input type="checkbox"/> MACH 1105 Basic Machining .....	3
<input type="checkbox"/> MACH 1221 Grinding .....	2
<b>Third Semester</b> .....	<b>15</b>
<input type="checkbox"/> MACH 1251 CNC Machining.....	3
<input type="checkbox"/> MAIN 2310 Peripheral Machine Systems.....	2
<input type="checkbox"/> MAIN 2320 Electric Motors and Sensors .....	3
<input type="checkbox"/> MAIN 2330 Power Transmission.....	4
<input type="checkbox"/> MAIN 2340 Controls .....	3
<b>Fourth Semester</b> .....	<b>17</b>
<input type="checkbox"/> MAIN 2400 Service/Machine Troubleshooting .....	5
<input type="checkbox"/> MAIN 2410 Preventative Maintenance.....	2
<input type="checkbox"/> MAIN 2420 Electrical Troubleshooting .....	3
<input type="checkbox"/> MAIN 2430 Accuracies.....	3
<input type="checkbox"/> ENGL 2105 Business and Technical Writing.....	4

**Faculty Contact**

[Jesse Oldenburg](#) ..... 763-576-4065

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

**Program Information**

The Anoka Technical College Associate of Applied Science (AAS) degree in Mechanical Drafting & Design Technology is a 69-credit program that consists of technical courses designed to develop skills in mechanical drafting, design, and related fields.

All manufactured goods are created following a design process and this process needs to be documented. This documentation includes three-dimensional computer models, detailed two-dimensional drawings, bill of materials, engineering and manufacturing changes, physical prototypes, and more. The ability to follow strict industry standards while utilizing creativity to solve and document complex problems is the job of a mechanical designer.

In addition to drafting and detailing skills, students receive training in related areas such as industrial materials, manufacturing methods, machining, and professional communication.

Students also receive hands-on training in Anoka Technical College's computer aided drafting lab. (AutoCAD, Inventor, ProE/Creo, and Solidworks)

The primary goal of the Mechanical Drafting and Design program is to provide all graduates with the solid technical foundation necessary to ensure their success in a wide variety of employment opportunities. To accomplish this goal, program learning outcomes and program objectives are defined and assessed for continuous improvement.

Program Objectives. Graduates two to three years into their careers should have the foundation to:

1. Identify, create and evaluate solutions to complex engineering-related problems in a timely and professional manner utilizing the skills developed in the areas of design, manufacturing and mechanics.
2. Solve technical problems while considering the local, national, and global requirements and impact of the solution.
3. Successfully function as a team member and leader.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- Apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- Conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- Function effectively as a member of a technical team.
- Identify, analyze, and solve narrowly defined engineering technology problems.
- Apply written, oral, and graphical communication in both technical and non-technical environments; and identify and use appropriate technical literature.
- Understand the need for and an ability to engage in self-directed continuing professional development.

- Understand and commit to addressing professional and ethical responsibilities, including a respect for diversity.
- Commit to quality, timeliness, and continuous improvement.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in engineering materials, applied mechanics, and manufacturing methods.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in applied drafting practice emphasizing mechanical components and systems, as well as fundamentals of descriptive geometry, orthographic projection, sectioning, tolerancing and dimensioning, and basic computer aided drafting and design with technical depth in at least one of these areas.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in the application of physics and engineering materials having an emphasis in applied mechanics, or in-depth application of physics having emphasis in mechanical components and design.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**ENGL 1107 Composition I/ENGL 2105 Business and Technical Writing** Prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.

**MATH 1070 Technical Mathematics I** Prerequisites MATH 0801 or appropriate test score.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

Anoka Technical College Mechanical Drafting and Design Technology program graduates find employment with manufacturing companies, big and small, engineering firms, electro-mechanical companies and contract firms. Mechanical Drafting and Design Technology graduates have the necessary knowledge and an excellent foundation to begin their careers as mechanical drafters in engineering departments that design and manufacture hard goods products of every description. Most mechanical drafters begin as detail drafters, making the drawings required for the manufacture of products. Mechanical drafters can advance to supervisory positions within the department or may advance to assistant engineer as they gain experience. Other areas of advancement include purchasing and sales.

# Mechanical Drafting & Design

Associate of Applied Science (AAS) Degree

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
Spring Semester.....January *(with instructor approval)\*\**  
**\*\*Students who start in the spring will need more time to complete this program. Limited first semester technical courses are offered in the Spring semester.**

## Program Sequence

<b>Fall Semester</b> .....	<b>18</b>
<input type="checkbox"/> MATH 1070 Technical Mathematics I.....	3
<input type="checkbox"/> MATH 1080 Technical Mathematics II .....	2
<input type="checkbox"/> MECH 1200 Mechanical CAD I.....	4
<input type="checkbox"/> MECH 1216 Drafting Standards.....	5
<input type="checkbox"/> MECH 2064 Introduction to Inventor.....	4
<b>Spring Semester</b> .....	<b>16</b>
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<b>OR</b>	
<input type="checkbox"/> ENGL 2105 Business and Technical Writing .....	4
<input type="checkbox"/> MACH 1090 Machining Fundamentals.....	2
<input type="checkbox"/> MECH 1229 Materials and Processes .....	3
<input type="checkbox"/> MECH 2055 Geometric Dimensioning and Tolerancing.....	3
<input type="checkbox"/> MECH 2074 Solidworks .....	4
<b>Fall Semester</b> .....	<b>18</b>
<input type="checkbox"/> MECH 1235 Statics and Strengths of Materials .....	4
<input type="checkbox"/> MECH 2035 Process Design Drafting .....	3
<input type="checkbox"/> MECH 2084 Introduction to ProE/Creo.....	4
<input type="checkbox"/> SPCH 1500 Intercultural Communications .....	3
<b>OR</b>	
<input type="checkbox"/> SPCH 1200 Interpersonal Communications .....	3
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	4
<b>Spring Semester</b> .....	<b>17</b>
<input type="checkbox"/> MECH 1245 Sheet Metal Concepts and Applications .....	3
<input type="checkbox"/> MECH 2045 Design Projects .....	4
<input type="checkbox"/> MECH 2080 Special Projects.....	3
<input type="checkbox"/> MECH 2090 Advanced CAD.....	3
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	4

## Faculty Contact

[Paul Klevann](#)..... 763-576-4188

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Mechanical CAD Drafter diploma and Mechanical CAD Operator certificate*

**Program Information**

The Anoka Technical College Mechanical CAD Drafter diploma is a 58-credit program that consists of technical courses designed to develop skills in mechanical drafting, design, and related fields.

All manufactured goods are created following a design process and this process needs to be documented. This documentation includes three-dimensional computer models, detailed two-dimensional drawings, bill of materials, engineering and manufacturing changes, physical prototypes, and more. The ability to follow strict industry standards while utilizing creativity to solve and document complex problems is the job of a mechanical designer.

In addition to drafting and detailing skills, the students receive training in related areas such as industrial materials, manufacturing methods, machining, and professional communication.

Students also receive hands-on training in Anoka Technical College's computer aided drafting lab. (AutoCAD, Inventor, ProE/Creo, and Solidworks)

The primary goal of the Mechanical Drafting and Design program is to provide all graduates with the solid technical foundation necessary to ensure their success in a wide variety of employment opportunities. To accomplish this goal, program learning outcomes and program objectives are defined and assessed for continuous improvement.

Program Objectives. Graduates two to three years into their careers should have the foundation to:

1. Identify, create and evaluate solutions to complex engineering-related problems in a timely and professional manner utilizing the skills developed in the areas of design, manufacturing and mechanics.
2. Solve technical problems while considering the local, national, and global requirements and impact of the solution.
3. Successfully function as a team member and leader.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- Apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- Conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- Function effectively as a member of a technical team.
- Identify, analyze, and solve narrowly defined engineering technology problems.
- Apply written, oral, and graphical communication in both technical and non-technical environments; and identify and use appropriate technical literature.
- Understand the need for and an ability to engage in self-directed continuing professional development.
- Understand and commit to addressing professional and ethical responsibilities, including a respect for diversity.

- Commit to quality, timeliness, and continuous improvement.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in engineering materials, applied mechanics, and manufacturing methods.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in applied drafting practice emphasizing mechanical components and systems, as well as fundamentals of descriptive geometry, orthographic projection, sectioning, tolerancing and dimensioning, and basic computer aided drafting and design with technical depth in at least one of these areas.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in the application of physics and engineering materials having an emphasis in applied mechanics, or in-depth application of physics having emphasis in mechanical components and design.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**ENGL 1107 Composition I/ENGL 2105 Business and Technical Writing** Prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.

**MATH 1070 Technical Mathematics I** Prerequisites MATH 0801 or appropriate test score

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

Anoka Technical College Mechanical Drafting and Design Technology program graduates find employment with manufacturing companies, engineering firms, electro-mechanical companies, and contract firms. Mechanical Drafting and Design Technology graduates have the necessary knowledge and an excellent foundation to begin their careers as mechanical drafters in engineering departments that design and manufacture hard goods products of every description. Most mechanical drafters begin as detail drafters, making the drawings required for the manufacture of products. Mechanical drafters can advance to supervisory positions within the department or may advance to assistant engineers as they gain experience. Other areas of advancement include purchasing and sales.

# Mechanical CAD Drafter

Diploma

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August

Spring Semester .....January(With Instructor Approval)\*\*

\*\*Students who start in the spring will need more time to complete this program. Limited first semester technical courses are offered in the Spring semester.

## Program Sequence

**Fall Semester ..... 18**

MATH 1070 Technical Mathematics I..... 3

MATH 1080 Technical Mathematics II ..... 2

MECH 1200 Mechanical CAD I..... 4

MECH 1216 Drafting Standards..... 5

MECH 2064 Introduction to Inventor..... 4

**Spring Semester..... 12**

MACH 1090 Machining Fundamentals..... 2

MECH 1229 Materials and Processes ..... 3

MECH 2055 Geometric Dimensioning and Tolerancing..... 3

MECH 2074 Solidworks ..... 4

**Fall Semester ..... 15**

ENGL 1107 Composition..... 4

**OR**

ENGL 2105 Business and Technical Writing..... 4

MECH 1235 Statics and Strengths of Materials ..... 4

MECH 2035 Process Design Drafting ..... 3

MECH 2084 Introduction to ProE/Creo..... 4

**Spring Semester..... 13**

MECH 1245 Sheet Metal Concepts and Applications ..... 3

MECH 2045 Design Projects ..... 4

MECH 2080 Special Projects..... 3

MECH 2090 Advanced CAD..... 3

## Faculty Contact

[Paul Klevann](#)..... 763-576-4188

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Mechanical CAD Drafting & Design AAS and Mechanical CAD Operator certificate*

**Program Information**

The Anoka Technical College Mechanical CAD Operator certificate is a 25-credit program that consists of technical courses designed to develop skills in mechanical drafting.

In addition to drafting and detailing skills, the students receive training in related areas such as industrial materials, manufacturing methods, and professional communication. Students also receive hands-on training in Anoka Technical College's computer aided drafting lab. (AutoCAD, Inventor, ProE/Creo, and Solidworks)

The primary goal of the Mechanical Drafting and Design program is to provide all graduates with the solid technical foundation necessary to ensure their success in a wide variety of employment opportunities.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- Apply written, oral, and graphical communication in both technical and non-technical environments; and identify and use appropriate technical literature.
- Understand the need for and an ability to engage in self-directed continuing professional development.
- Commit to quality, timeliness, and continuous improvement.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in engineering materials, applied mechanics, and manufacturing methods.
- Demonstrate knowledge and technical competency appropriate to the objectives of the program in applied drafting practice emphasizing mechanical components and systems, as well as fundamentals of descriptive geometry, orthographic projection, sectioning, tolerancing and dimensioning, and basic computer aided drafting and design with technical depth in at least one of these areas.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a "C" or better.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

**Industry Information**

Anoka Technical College Mechanical Drafting and Design Technology program graduates find employment with manufacturing companies, engineering firms, electro-mechanical companies, and contract firms. Mechanical Drafting and Design Technology graduates have the necessary knowledge and an excellent foundation to begin their careers as mechanical drafters in engineering departments that design and manufacture hard goods products of every description. Most mechanical drafters begin as detail drafters, making the drawings required for the manufacture of products. Mechanical drafters can advance to supervisory positions within the department or may advance to assistant engineers as they gain experience. Other areas of advancement include purchasing and sales.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

**Start Dates**

Fall Semester.....August  
Spring Semester .....January\*\*  
\*\**Students who start in the spring will need more time to complete this program. Limited first semester technical courses are offered in the Spring semester.*

**Program Sequence**

<b>Fall Semester</b> .....	<b>13</b>
<input type="checkbox"/> MECH 1200 Mechanical CAD I .....	4
<input type="checkbox"/> MECH 1216 Drafting Standards .....	5
<input type="checkbox"/> MECH 2064 Introduction to Inventor .....	4
<b>OR</b>	
<input type="checkbox"/> MECH 2084 Introduction to ProE/Creo .....	4
<b>Spring Semester</b> .....	<b>12</b>
<input type="checkbox"/> MACH 1090 Machining Fundamentals .....	2
<input type="checkbox"/> MECH 1229 Materials and Processes .....	3
<input type="checkbox"/> MECH 2074 Solidworks .....	4
<input type="checkbox"/> MECH 2090 Advanced CAD .....	3

**Faculty Contact**

[Paul Klevann](#)..... 763-576-4188

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Mechanical CAD Drafting and Design AAS and Mechanical CAD Drafter diploma*

# Quality Technician

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 45  
 MnTC General Education ..... 15  
 Total Credits ..... 60

## Program Information

This program is designed to train student in the tools and processes used to ensure the quality of finished goods and products. Graduates of this degree will have the skills necessary to be employed as a quality assurance technician in a variety of manufacturing sectors. With completion of this degree students will also obtain 15 Minnesota Transferable Credits meeting three different goal areas.

## Program Learning Outcomes

Upon completion of this degree, students will be able to competently use tools and processes utilized in industry for the inspection of finished goods. Students completing the AAS degree combined with experience in the field will also be able to test for the American Society of Quality (ASQ) Certification for a Quality Technician.

Students will be able to perform the following tasks in their new career field.

- Demonstrate document control skills.
- Competently utilize tools to inspect finished goods of any kind.
- Ensure quality within the supply chain for consumer safety.
- Analysis of collected data.
- Create and maintain inspection documentation.
- Interact professionally with coworkers.
- Interpret engineering drawing utilizing Geometric Dimensioning and Tolerancing.
- Understand basic manufacturing practices.
- Knowledgeable in regulatory standards and requirements.
- Able to work in a management team.
- Creating a quality management system.
- Calibration of measurement gauging.
- Creation and requisitioning on measurement fixtures.
- Analysis of Statistical Data for Process control.
- Create metrics of cost of quality.
- Have an ethical foundation of the importance of quality management.
- Able to identify continuous improvement opportunities.

## Certifications

This program seeks to provide students sufficient knowledge and comprehension of the requirements pursuant to the American Society for Quality (ASQ) which in conjunction with on the job experience provides a tested certification recognized globally.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**ENGL 2105 Business & Technical Writing** Prerequisite is ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score

**MATH 1550 Introduction to Statistics** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

This field is under-represented in higher education and no program has the required skills in statistical analysis. Quality Technicians are the individuals who assure that the quality of manufactured products meet the requirements of the customer and regulatory bodies. Quality technicians work in clean, environmentally controlled areas with regulated temperature and humidity to ensure part consistency. This is a mid-level position in the field with large opportunity for advancement and increased wage growth.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August

## Program Sequence

<b>Fall Semester</b> .....	<b>15</b>
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ENGL 2105 Business & Technical Writing .....	4
<input type="checkbox"/> MACH 1121 Metrology .....	2
<input type="checkbox"/> MACH 1132 Blueprint Reading I .....	3
<input type="checkbox"/> MATH 1550 Introduction to Statistics .....	4
<b>Spring Semester.....</b>	<b>15</b>
<input type="checkbox"/> MACH 1090 Machine Fundamentals .....	2
<input type="checkbox"/> MACH 1231 Blueprint Design/ CAD II .....	1
<input type="checkbox"/> MACH 1240 Geometric Dimensioning & Tolerancing .....	3
<input type="checkbox"/> QUAL 1200 Measurement & Test Equipment .....	4
<input type="checkbox"/> QUAL 1210 Quality Concepts & Assurance .....	2
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3
<b>Fall Semester</b> .....	<b>15</b>
<input type="checkbox"/> QUAL 2300 Applied GD&T Concepts .....	4
<input type="checkbox"/> QUAL 2310 Product & Process Control .....	2
<input type="checkbox"/> QUAL 2320 Gauging Calibration.....	4
<input type="checkbox"/> QUAL 2330 Quality Ethics .....	2
<input type="checkbox"/> QUAL 2340 Fixturing for Inspection .....	3



# Quality Technician

Associate of Applied Science (AAS) Degree

**Spring Semester..... 15**

- QUAL 2400 Process Performance Capability & Reliability .... 2
- QUAL 2410 Validation Documentation & Regulatory .....  
Compliance ..... 3
- QUAL 2420 Continuous Improvement ..... 2
- QUAL 2430 Quantitative Methods & Tools..... 4
- [MnTC General Education Elective](#) ..... 4

### Faculty Contact

[Todd Crawford](#) ..... 763-576-4102

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Quality Inspector certificate*

**Program Information**

This program is designed to train student in the tools and processes used to ensure the quality of finished goods and products. Graduates of this certificate will have the skills necessary to be employed as a quality assurance inspector in a variety of manufacturing sectors. With completion of this degree students will also obtain 11 Minnesota Transferable Credits meeting three different goal areas.

**Program Learning Outcomes**

Students will be able to perform the following tasks in their new career field.

- Demonstrate document control skills.
- Competently utilize tools to inspect finished goods of any kind.
- Ensure quality within the supply chain for consumer safety.
- Analysis of collected data.
- Create and maintain inspection documentation.
- Interact professionally with coworkers.
- Interpret engineering drawing utilizing Geometric Dimensioning and Tolerancing.
- Understand basic manufacturing practices.

**Certifications**

Upon completion of this certificate, students will be able to competently use tools and processes utilized in industry for the inspection of finished goods. Students continuing to the AAS degree combined with experience in the field will also be able to test for the American Society of Quality (ASQ) Certification for a Quality Inspector.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**ENGL 2105 Business & Technical Writing** Prerequisite is ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score

**MATH 1550 Introduction to Statistics** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

**Industry Information**

This field is under-represented in higher education and no program has the required skills in statistical analysis. Quality Inspectors are the individuals who assure that the quality of manufactured products meet the requirements of the customer and regulatory bodies. Quality inspectors work in clean, environmentally controlled areas with regulated temperature and humidity to ensure part consistency. This is a mid-level position in the field with large opportunity for advancement and increased wage growth.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

**Start Dates**

Fall Semester.....August

**Program Sequence**

<b>Fall Semester</b> .....	<b>15</b>
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ENGL 2105 Business & Technical Writing .....	4
<input type="checkbox"/> MACH 1121 Metrology .....	2
<input type="checkbox"/> MACH 1132 Blueprint Reading I .....	3
<input type="checkbox"/> MATH 1550 Introduction to Statistics .....	4
<b>Spring Semester.....</b>	<b>15</b>
<input type="checkbox"/> MACH 1090 Machine Fundamentals .....	2
<input type="checkbox"/> MACH 1231 Blueprint Design/ CAD II .....	1
<input type="checkbox"/> MACH 1240 Geometric Dimensioning & Tolerancing .....	3
<input type="checkbox"/> QUAL 1200 Measurement & Test Equipment .....	4
<input type="checkbox"/> QUAL 1210 Quality Concepts & Assurance .....	2
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3

**Faculty Contact**

[Todd Crawford](#) ..... 763-576-4102

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)  
*Also see: [Quality Technician AAS](#)*

## Program Information

The Anoka Technical College Associate of Applied Science (AAS) degree in Welding is a 66-credit program designed for individuals seeking a well-rounded welding background. The Welding program consists of technical courses, specifically designed to develop exceptional welding skills utilizing the major welding processes that are vital to industry.

The technical courses are broken out into semester-long certificates to provide quick access into a welding career. The degree program also offers a balance of general education courses to complement the welding courses and to provide students with opportunity to capitalize on a broad-based welding education.

This program requires students to go full-time. Each semester students are required to take all courses.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will weld to visual acceptance criteria per applicable American Welding Society standards in Gas Tungsten Arc Welding, Gas Metal Arc Welding and the Shielded Metal Arc Welding process.
- Students will prepare weld joints and perform welding operations using welding symbol information.
- Students will follow established procedures and policies regarding personal protective gear, shop safety and welding equipment.
- Students will visually examine all work for discontinuities and defects with the knowledge of industry specification.
- Students will work in a team environment and accept constructive criticism.
- Students will operate safely and proficiently using Oxy-fuel, Plasma and Carbon Air Arc equipment.
- Students will demonstrate the ability to weld to entry level standard per American Welding Society on carbon steel, stainless steel, and aluminum.

## Certification

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills needed to take three national certification examinations:

- American Society of Mechanical Engineers;
- American Petroleum Institute; and
- American Welding Society's Welding Code

## Courses Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**MATH 1500 Mathematical Ideas** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world's oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence. A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond. Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

## Wages/Outlook/Advancement

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, experienced welders may become technicians, supervisors, inspectors, or instructors. Other experienced welders and solderers open their own repair shops.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester ..... August  
 Spring Semester ..... January

## General Education: 15 Credits

Fifteen (15) credits of general education credits from the Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

*Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*

MATH 1500 Mathematical Ideas ..... 3  
[MnTC General Education Elective](#) ..... 12



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### Program Sequence

**First Semester** (*Basic Welding Certificate*) ..... 17

- WELD 1000 Blueprint 1- Lecture..... 1
- WELD 1001 Blueprint 1- Lab..... 1
- WELD 1002 Math for Welders ..... 1
- WELD 1004 Oxy-Fuel Applications ..... 1
- WELD 1006 Oxy-Fuel Processes ..... 1
- WELD 1012 Processes and Power Sources I ..... 3
- WELD 1014 Gas Tungsten Arc Welding I ..... 3
- WELD 1018 Shielded Metal Arc Welding I ..... 3
- WELD 1020 Gas Metal Arc Welding I-A ..... 1
- WELD 1021 Gas Metal Arc Welding I-B ..... 2

**Second Semester** (*Welding Technology Diploma*) ..... 17

- WELD 1022 Blueprint Reading II ..... 3
- WELD 1024 Metals Theory I ..... 2
- WELD 1026 Processes and Power Source II ..... 3
- WELD 1028 Gas Tungsten Arc Welding II ..... 3
- WELD 1034 Gas Metal Arc Welding II ..... 3
- WELD 1036 Shielded Metal Arc Welding II ..... 3

**Third Semester** (*Fabricator Certificate*) ..... 17

- WELD 1209 Basic Pipe Welding ..... 5
- WELD 2000 Basic Pipe Layout ..... 3
- WELD 2004 Metals Theory II ..... 3
- WELD 2006 Welding Code Interpretation ..... 2
- WELD 2008 Blueprint Reading III ..... 4

### Faculty Contact

<a href="#">Jay Gerdin</a> .....	763-576-4055
<a href="#">Rich Godeen</a> .....	763-576-4122
<a href="#">Lisa Glendower</a> .....	763-576-4086
<a href="#">David Vlasyuk</a> .....	763-576-4257

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding Technology diploma, Basic Welding certificate, Robotic and Laser Welding AAS and certificate, Welding Fabricator certificate, and Pipe Welder certificate*

### Program Information

The Anoka Technical College Welding Technology diploma is a 34-credit program (the 34 total credits include 17 credits from the Basic Welding certificate) specifically designed to develop exceptional welding skills utilizing the major welding processes that are vital to industry.

The Welding Technology diploma integrates theory with technical skills. Through the rigorous curriculum, students will develop fundamental knowledge of GMAW, GTAW, SMAW and Oxy fuel welding processes. Blueprint and math ability are incorporated in the coursework. Students will also learn metal comprehension, industry safety practices and related equipment applications.

This program requires students to go full-time each semester students are required to take all courses.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will weld to visual acceptance criteria per applicable American Welding Society standards in Gas Tungsten Arc Welding, Gas Metal Arc Welding and the Shielded Metal Arc Welding process.
- Students will prepare weld joints and perform welding operations using welding symbol information.
- Students will follow established procedures and policies regarding personal protective gear, shop safety and welding equipment.
- Students will visually examine all work for discontinuities and defects with the knowledge of industry specification.
- Students will work in a team environment and accept constructive criticism.
- Students will operate safely and proficiently using Oxy-fuel, Plasma and Carbon Air Arc equipment.
- Students will demonstrate the ability to weld to entry level standard per American Welding Society on carbon steel, stainless steel and aluminum

### Certification

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills needed to take the national certification examination:

- American Welding Society’s Welding Code

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world’s oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence. A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond. Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

### Wages/Outlook/Advancement

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, experienced welders may become technicians, supervisors, inspectors, or instructors. Other experienced welders and solderers open their own repair shops.

Wage information is available from the Minnesota Department of Education and [Minnesota Department of Employment and Economic Development](#).

### Locations

Anoka Technical College

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Technical Education: 34 Credits

<b>First Semester</b> ( <i>Basic Welding Certificate</i> ) .....	<b>17</b>
<input type="checkbox"/> WELD 1000 Blueprint 1- Lecture.....	1
<input type="checkbox"/> WELD 1001 Blueprint 1- Lab.....	1
<input type="checkbox"/> WELD 1002 Math for Welders .....	1
<input type="checkbox"/> WELD 1004 Oxy-Fuel Applications .....	1
<input type="checkbox"/> WELD 1006 Oxy-Fuel Processes .....	1
<input type="checkbox"/> WELD 1012 Processes and Power Sources I .....	3
<input type="checkbox"/> WELD 1014 Gas Tungsten Arc Welding I .....	3
<input type="checkbox"/> WELD 1018 Shielded Metal Arc Welding I .....	3
<input type="checkbox"/> WELD 1020 Gas Metal Arc Welding I-A .....	1
<input type="checkbox"/> WELD 1021 Gas Metal Arc Welding I-B .....	2



# Welding Technology

Diploma

**Second Semester (Welding Technology Diploma) ..... 17**

- WELD 1022 Blueprint Reading II ..... 3
- WELD 1024 Metals Theory I ..... 2
- WELD 1026 Processes and Power Source II ..... 3
- WELD 1028 Gas Tungsten Arc Welding II ..... 3
- WELD 1034 Gas Metal Arc Welding II ..... 3
- WELD 1036 Shielded Metal Arc Welding II ..... 3

### Faculty Contact

<a href="#">Jay Gerdin</a> .....	763-576-4055
<a href="#">Rich Godeen</a> .....	763-576-4122
<a href="#">Lisa Glendower</a> .....	763-576-4086

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding AAS, Basic Welding certificate, Robotic and Laser Welding AAS and certificate, Welding Fabricator certificate, and Pipe Welder certificate*

### Program Information

The Anoka Technical College Basic Welding certificate is a 17-credit program designed for individuals seeking a well-rounded foundation in welding. The Basic Welding certificate is designed for individuals who want quick access into the welding careers.

This program requires students to go full-time each semester students are required to take all courses.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will weld to visual acceptance criteria per applicable American Welding Society standards in Gas Tungsten Arc Welding, Gas Metal Arc Welding and the Shielded Metal Arc Welding process.
- Students will prepare weld joints and perform welding operations using welding symbol information.
- Students will follow established procedures and policies regarding personal protective gear, shop safety and welding equipment.
- Students will visually examine all work for discontinuities and defects with the knowledge of industry specification.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world's oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence. A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond. Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Locations

Anoka Technical College

### Start Dates

Fall Semester.....August  
Spring Semester .....January

### Program Sequence

<b>First Semester</b> .....	<b>17</b>
<input type="checkbox"/> WELD 1000 Blueprint 1- Lecture.....	1
<input type="checkbox"/> WELD 1001 Blueprint 1- Lab.....	1
<input type="checkbox"/> WELD 1002 Math for Welders .....	1
<input type="checkbox"/> WELD 1004 Oxy-Fuel Applications .....	1
<input type="checkbox"/> WELD 1006 Oxy-Fuel Processes .....	1
<input type="checkbox"/> WELD 1012 Processes and Power Sources I .....	3
<input type="checkbox"/> WELD 1014 Gas Tungsten Arc Welding I .....	3
<input type="checkbox"/> WELD 1018 Shielded Metal Arc Welding I .....	3
<input type="checkbox"/> WELD 1020 Gas Metal Arc Welding I-A .....	1
<input type="checkbox"/> WELD 1021 Gas Metal Arc Welding I-B .....	2

### Faculty Contact

[Jay Gerdin](#) ..... 763-576-4055  
[Rich Godeen](#)..... 763-576-4122  
[Lisa Glendower](#)..... 763-576-4086

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding AAS, Welding Technology diploma, Robotic and Laser Welding AAS and certificate, Welding Fabricator certificate, and Pipe Welder certificate*



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### Program Information

The Anoka Technical College Welding Fabricator certificate is 17-credit program which offers individuals the opportunity to develop skills necessary for construction, manufacturing, building, and fabrication for real weldments. Students entering this certificate program have good welding ability, but seek greater applications skills.

This program requires students to go full-time each semester students are required to take all courses.

### Certifications

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills need to take three national certification examinations:

- American Society of Mechanical Engineers
- American Petroleum Institute
- American Welding Society’s Welding Code

### Admission Requirements

Must complete the Welding Technology diploma or be in the Welding Associate of Applied Science (AAS) degree.

### Course Prerequisites

Successful Completion of WELD 1022, WELD 1024, WELD 1026, WELD 1028, WELD 1034, and WELD 1036.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

The courses in the Fabricator certificate serves as the third semester courses in the Associate of Applied Arts (AAS) degree in Welding program.

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world’s oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence.

A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond.

Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

### Wages/Outlook/Advancement

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, experienced welders may become technicians, supervisors, inspectors, or instructors. Other experienced welders and solderers open their own repair shops.

Wage information is available from the Minnesota Department of Education and [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August

### Program Sequence

<b>Fall Semester</b> .....	<b>17</b>
<input type="checkbox"/> WELD 1209 Basic Pipe Welding .....	3
<input type="checkbox"/> WELD 2000 Basic Pipe Layout .....	5
<input type="checkbox"/> WELD 2004 Metals Theory II .....	3
<input type="checkbox"/> WELD 2006 Welding Code Interpretation .....	2
<input type="checkbox"/> WELD 2008 Blueprint Reading III .....	4

### Faculty Contact

[Jay Gerdin](#) ..... 763-576-4055  
[David Vlasyuk](#) ..... 763-576-4257

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding AAS, Welding Technology diploma, Basic Welding certificate, Pipe Welder certificate and Robotic and Laser Welding AAS and certificate*



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[AnokaTech.edu](http://AnokaTech.edu)

### Program Information

The Anoka Technical College offers a 17-credit Pipe Welding certification which is designed for individuals seeking the highest welding skill level, the most demanding manual welding discipline.

Graduates from the Pipe Welding certificate have the skills required to master manual pipe welding and obtain the highest paying jobs in welding.

This program requires students to go full-time each semester students are required to take all courses.

### Certifications

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills needed to take three national certification examinations:

- American Society of Mechanical Engineers
- American Petroleum Institute
- American Welding Society's Welding Code

### Admission Requirements

Must complete Fabricator certificate or the Welding Associate of Applied Science (AAS) degree.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world's oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence. A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond. Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

### Wages/Outlook/Advancement

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, experienced welders may become technicians, supervisors, inspectors, or instructors. Other experienced welders and solderers open their own repair shops.

Wage information is available from the Minnesota Department of Education and [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Spring Semester .....January

### Technical Education: 17 Credits

<b>Spring Semester</b> .....	<b>17</b>
<input type="checkbox"/> WELD 2012 GMAW 5G & 6G Pipe Welding .....	2
<input type="checkbox"/> WELD 2014 GTAW 5G & 6G Pipe Welding .....	5
<input type="checkbox"/> WELD 2016 SMAW 5G & 6G Pipe WeldingII .....	5
<input type="checkbox"/> WELD 2018 Blueprint Reading IV .....	5

### Faculty Contact

[Jay Gerdin](#) ..... 763-576-4055  
[David Vlasjuk](#) ..... 763-576-4257

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding AAS, Welding Technology diploma, Fabricator certificate, Basic Welding certificate, and Robotic and Laser Welding AAS and certificate*

## Program Information

The Anoka Technical College Associate of Applied Science (AAS) degree in Robotic and Laser Welding is a 67-credit program designed for individuals seeking a well-rounded welding background. The Welding program consists of technical courses, specifically designed to develop exceptional welding skills utilizing the major welding processes that are vital to industry. This program will train students in fundamentals of ABB, Fanuc and OTC robot programming and language. The laser portion of this program will include development and documentation of procedures and qualification of welds, and the calibration of equipment for welding.

The degree program also offers a balance of general education courses to complement the welding courses and to provide students with opportunity to capitalize on a broad-based welding education.

This program requires students to go full-time each semester students are required to take all courses.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will weld to visual acceptance criteria per applicable American Welding Society standards in Gas Tungsten Arc Welding, Gas Metal Arc Welding and the Shielded Metal Arc Welding process.
- Students will prepare weld joints and perform welding operations using welding symbol information.
- Students will follow established procedures and policies regarding personal protective gear, shop safety and welding equipment.
- Students will visually examine all work for discontinuities and defects with the knowledge of industry specification.
- Students will work in a team environment and accept constructive criticism.
- Students will operate safely and proficiently using Oxy-fuel, Plasma and Carbon Air Arc equipment.
- Students will demonstrate the ability to weld to entry level standard per American Welding Society on carbon steel, stainless steel, and aluminum.
- Demonstrate ability to operate robots and lasers safely.
- Program robotic and arc welders.
- Develop weld schedules and edit weld programs.
- Program and cut parts using CNC laser cutting equipment.
- Develop laser welding and programs.
- Document results of weld procedure and qualification tests.

## Certification

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills needed to take three national certification examinations:

- American Welding Society’s (AWS) Welding Code AWS; and
- Certified Robotic Arc Welding Certification (CRAW)

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

**MATH 1500 Mathematical Ideas** Prerequisites MATH 0900 or MATH 0950 or MATH 1080 or MATH 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

The diversification of the welding industry impacts virtually every industry around the globe. From the depth of the world’s oceans to the far-reaching corners of outer space, there is a welding position for every hardworking, ambitious, smart individual who is ready and willing to constantly improve and strive for excellence. A career choice in welding offers a vast array of options for employment and continuing personal development. Welding is the most common way to permanently join metal parts. Heat is applied to the pieces that are being joined, melting and fusing them together which forms a permanent bond. Therefore, welding plays a key role in industry production lines, laboratories, research and development, national defense, sales and service, NASCAR and drag racing, custom motorcycle building, artwork, sculptures, pipelines, power plants, refineries, construction, maintenance, repair and much more.

## Wages/Outlook/Advancement

Welders and solderers can advance to more skilled jobs with additional training and experience. For example, experienced welders may become technicians, supervisors, inspectors, or instructors. Other experienced welders and solderers open their own repair shops.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
 Spring Semester .....January

# Robotic and Laser Welding

Associate of Applied Science (AAS) Degree

## General Education: 15 Credits

Fifteen (15) credits of general education credits from the Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

*Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*

MATH 1500 Mathematical Ideas .....	3
<a href="#">MnTC General Education Elective</a> .....	12

## Program Sequence

### First Semester (*Basic Welding Certificate*) ..... 17

- WELD 1000 Blueprint 1- Lecture..... 1
- WELD 1001 Blueprint 1- Lab..... 1
- WELD 1002 Math for Welders ..... 1
- WELD 1004 Oxy-Fuel Applications ..... 1
- WELD 1006 Oxy-Fuel Processes ..... 1
- WELD 1012 Processes and Power Sources I ..... 3
- WELD 1014 Gas Tungsten Arc Welding I ..... 3
- WELD 1018 Shielded Metal Arc Welding I ..... 3
- WELD 1020 Gas Metal Arc Welding I-A ..... 1
- WELD 1021 Gas Metal Arc Welding I-B ..... 2

### Second Semester (*Welding Technology Diploma*) ..... 17

- WELD 1022 Blueprint Reading II ..... 3
- WELD 1024 Metals Theory I ..... 2
- WELD 1026 Processes and Power Source II ..... 3
- WELD 1028 Gas Tungsten Arc Welding II ..... 3
- WELD 1034 Gas Metal Arc Welding II ..... 3
- WELD 1036 Shielded Metal Arc Welding II ..... 3

### Third Semester (*Robotic and Laser Welding Certificate*) ..... 18

- WELD 2006 Welding Code Interpretation..... 2
- WELD 2100 Laser Cutting ..... 2
- WELD 2110 Laser Welding ..... 4
- WELD 2120 Welding Procedures ..... 1
- WELD 2130 Fanuc Robotics ..... 3
- WELD 2140 ABB Robotics..... 3
- WELD 2150 OTC Robotics ..... 3

## Faculty Contact

<a href="#">Jay Gerdin</a> .....	763-576-4055
<a href="#">Rich Godeen</a> .....	763-576-4122
<a href="#">Lisa Glendower</a> .....	763-576-4086

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding Technology diploma, Basic Welding certificate, Robotic and Laser Welding certificate, Welding Fabricator certificate, and Pipe Welder certificate*

## Program Information

The Robotic and Laser Welding program will focus on robot and laser safety, programming, and operation. The Robotic and Laser Welding certificate will train students in the fundamentals of ABB, Fanuc and OTC robot programming and language. Laser welding will include the development and documentation of procedures and qualification of welds, and the calibration of equipment for welding. Laser cutting will focus on creating programs using CNC laser cutting equipment.

This program requires students to go full-time each semester students are required to take all courses.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Demonstrate ability to operate robots and lasers safely.
2. Program robotic arc welders.
3. Develop weld schedules and edit weld programs.
4. Program and cut parts using CNC laser cutting equipment.
5. Develop laser welding and programs.
6. Document results of weld procedure and qualifications tests.

## Certifications

The Welding program not only provides students with a thorough background in welding and related theory, but also prepares students with the knowledge and skills need to take a national certification examination.

- American Welding Society (AWS) Certified Robotic Welding Certification (CRAW)

## Admission Requirements

Successfully complete the Basic Welding certificate or Instructor approval.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Robotic and laser welding is expected to grow at a substantial rate in the coming years. Contributing factors to this growth includes demand for greater safety, improve productivity, and quality. With the combination of robotics and lasers, companies see an increased manufacturing speed, affordable materials, and better rates for their clients. This growing field will expand in many different areas including but not limited to automotive plants, machine shops, and global market.

## Wages/Outlook/Advancement

Wage information is available from the Minnesota Department of Education and [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## Program Sequence

<b>First Semester</b> .....	<b>18</b>
<input type="checkbox"/> WELD 2006 Welding Code Interpretation.....	2
<input type="checkbox"/> WELD 2100 Laser Cutting .....	2
<input type="checkbox"/> WELD 2110 Laser Welding .....	4
<input type="checkbox"/> WELD 2120 Welding Procedures .....	1
<input type="checkbox"/> WELD 2130 Fanuc Robotics .....	3
<input type="checkbox"/> WELD 2140 ABB Robotics.....	3
<input type="checkbox"/> WELD 2150 OTC Robotics .....	3

## Faculty Contact

[Jay Gerdin](#)..... 763-576-4055  
For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Welding AAS, Welding Technology diploma, Basic Welding certificate, Fabricator certificate, Robotic and Laser Welding AAS, and Pipe Welder certificate*

The image features a dynamic, abstract composition. On the left side, several sharp, overlapping rays of color—black, grey, yellow, and red—radiate from the top-left corner towards the center. A prominent, dark red banner extends horizontally from the center towards the right edge. The background is a gradient of light to dark red, with a subtle, glowing effect in the center. The overall aesthetic is modern and high-tech.

# **Health Science Technology**

## Program Information

The Anoka Technical College Emergency Medical Services (EMS) certificate is a nine (9)-credit program designed to prepare students for gainful employment in the field of EMS or to transition to further their EMS education. This certificate can be completed entirely at Anoka Technical College or Anoka-Ramsey Community Colleges' Cambridge Campus.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Prepare entry level EMS providers to be employable upon completion
- Provide up-to-date EMS education to all interested parties
- Be a sound, responsible partner to stakeholders in the EMS industry
- Create pathways of transferability to higher level EMS Education Programs
- Manage the finances of the program in a cost-effective, prudent manner

## Background Study

Minnesota Law requires that any person who provides services that involve direct contact with patients and/or residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate at a clinical site. The student has the right to request reconsideration of the disqualification. For consideration to continue in the program, the student must request reconsideration and provide a copy of such request. The student is responsible for requesting the commissioner to reconsider the disqualification. The college will withdraw any student who is disqualified by the Minnesota Department of Health.

## Accreditation/Certifications

The EMS program follows the National Highway Traffic Safety Administration curriculum and is approved by the State of Minnesota Emergency Medical Services Regulatory Board (EMSRB).

## Graduation Requirements

All Students completing the Emergency Medical Program must complete all courses with a grade of a C or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

Emergency Medical Technicians (EMTs) are found in many career areas across the nation and beyond. Emergency Medical Services (EMS) encompasses all of those that respond to emergency situations. EMTs are entry-level EMS providers capable of performing lifesaving interventions within their defined scope of practice.

## Wages/Outlook/Advancement

Partnerships between the college and the emergency health care industries further enhance the knowledge and skills of our students. With advanced training, students become more marketable as emergency providers in the emergency healthcare field. Education as an emergency medical responder (EMR), emergency medical technician (EMT) or an advanced emergency medical technician (AEMT) can lead to a satisfying and fulfilling profession in the emergency medical system and enhances many careers throughout our nation's workforce.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester..... August  
Spring Semester ..... January

## Locations

Anoka Technical College  
Anoka-Ramsey Community College- Cambridge Campus

## Program Sequence

<b>First Semester</b> .....	<b>9</b>
<input type="checkbox"/> EMED 1113 Emergency Medical Technician 1.....	4
<input type="checkbox"/> EMED 1114 Emergency Medical Technician 2.....	5

## Faculty Contact

[Brad Wright](#)..... 763-576-4058

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Emergency Medical Services 18 credit certificate and Paramedic AAS*



## Program Information

The Anoka Technical College Emergency Medical Services (EMS) certificate is a 18-credit program designed to prepare students for gainful employment in the field of EMS or to transition to further their EMS education. This certificate can be completed entirely at Anoka Technical College or Anoka-Ramsey Community Colleges' Cambridge Campus.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Prepare entry level EMS providers to be employable upon completion
- Provide up-to-date EMS education to all interested parties
- Be a sound, responsible partner to stakeholders in the EMS industry
- Create pathways of transferability to higher level EMS Education Programs
- Manage the finances of the program in a cost-effective, prudent manner

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

**BIOL 1106 Principles of Biology** Prerequisites READ 0900 or READ 0960 or appropriate test score.

### BIOL 1106 Principles of Biology I

Corequisites: CHEM 1020 or 1050 or 1061 with a grade of C or better or HS chemistry within the last three years.

Recommended Skills, Abilities, or Coursework: College-level reading, writing, and math skills. Strongly recommended that Chem 1020 or 1050 or 1061 be completed with a grade of "C" or higher PRIOR to BIOL 1106

## Background Study

Minnesota Law requires that any person who provides services that involve direct contact with patients and/or residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate at a clinical site. The student has the right to request reconsideration of the disqualification. For consideration to continue in the program, the student must request reconsideration and provide a copy of such request. The student is responsible for requesting the commissioner to reconsider the disqualification. The college will withdraw any student who is disqualified by the Minnesota Department of Health.

## Accreditation/Certifications

The EMS program follows the National Highway Traffic Safety Administration curriculum and is approved by the State of Minnesota Emergency Medical Services Regulatory Board (EMSRB).

## Graduation Requirements

All Students completing the Emergency Medical Program must complete all courses with a grade of a C or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Emergency Medical Technicians (EMTs) are found in many career areas across the nation and beyond. Emergency Medical Services (EMS) encompasses all of those that respond to emergency situations. EMTs are entry-level EMS providers capable of performing lifesaving interventions within their defined scope of practice.

## Wages/Outlook/Advancement

Partnerships between the college and the emergency health care industries further enhance the knowledge and skills of our students. With advanced training, students become more marketable as emergency providers in the emergency healthcare field. Education as an emergency medical responder (EMR), emergency medical technician (EMT) or an advanced emergency medical technician (AEMT) can lead to a satisfying and fulfilling profession in the emergency medical system and enhances many careers throughout our nation's workforce. Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester..... August  
Spring Semester ..... January

## Locations

Anoka Technical College  
Anoka-Ramsey Community College- Cambridge Campus

## Program Sequence

**First Semester** ..... 11  
 EMED 1113 Emergency Medical Technician 1 ..... 4  
 EMED 1114 Emergency Medical Technician 2 ..... 5  
 HLTH 1040 Medical Terminology ..... 2  
**OR**  
 **BIOL 1102\*** *Medical Terminology* ..... 2

# Emergency Medical Services

Certificate

<b>Second Semester .....</b>	<b>7</b>
<input type="checkbox"/> BIOL 1106 Principles of Biology .....	4
<b>OR</b>	
<input type="checkbox"/> <b>BIOL 1106* Principles of Biology I.....</b>	<b>4</b>
Please choose one of the following Communication courses	
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3
<input type="checkbox"/> SPCH 1500 Intercultural Communication.....	3
<input type="checkbox"/> <b>CMST 2200* Interpersonal Communication .....</b>	<b>3</b>
<input type="checkbox"/> <b>CMST 2210* Intercultural Communication .....</b>	<b>3</b>

*\*These courses are offered at ARCC Cambridge Campus*

## Faculty Contact

[Brad Wright](#)..... 763-576-4058

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or

[EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see Emergency Medical Services 9 credit certificate and Paramedic AAS*



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[AnokaTech.edu](http://AnokaTech.edu)

**Program Information**

The Anoka Technical College Associate of Applied Science (AAS) degree in Health Information Technology (HIT) is a 64-credit program that prepares students for a career working in health care and settings where health information is utilized. A student graduating with an HIT degree is well prepared to assume an entry-level position in this professional field.

- Successful graduates are prepared to demonstrate:
- Essential professional and technical knowledge
- Skills and competencies fundamental to the health information management profession.
- Effective written and oral communication skills.
- Problem solving, teamwork, and critical thinking skills.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Successful completion of the degree will allow the student to sit for the Registered Health Information Technician (RHIT) exam.
- Successful completion of the degree will allow the student to work in a hospital/healthcare setting beginning as an entry-level supervisor.
- Successful completion of the degree will allow the student to sit for a number of coding credentials, such as the CCA, CCS, CCS-P, CPC, CPC-H.
- Successful completion of the degree will allow the student to work in a hospital, clinic, public health facility, insurance company, or related facility.
- Successful completion of the degree will allow the student to deal with confidential patient information and work in the area of release of information.
- Successful completion of the degree will allow the student to transfer to a four-year degree program in Health Information Management.
- Successful completion of the degree will allow the student to further their career path by continuing their education in Tumor Registry.

**Accreditation**

The Health Information Technology degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). Only graduates of a program accredited by CAHIM are eligible to sit for the Registered Health Information Technician (RHIT) exam.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- BIOL 1106: READ 0900 or READ 0960 or appropriate placement score
- HITM 2000: MATH 0801 or appropriate test score and instructor approval

- HITM 2245: MATH 0801 or appropriate test score
- HITM 2260: Successful completion of first three semesters of HIT program and instructor permission

**Background Study**

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct contact with patients as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. The College will withdraw any student who is disqualified by the Minnesota Department of Health. The student is responsible for requesting the Commissioner to reconsider the disqualification.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS) in Health Information Technology must earn a grade of “C” or higher in every course in the program.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

The Health Information Management (HIM) professional is an important connection between doctors, patients, insurance providers, and other healthcare professionals within the field. By maintaining, collecting, and analyzing health information, the HIM professional makes an important behind the scenes contribution to the delivery of quality care. Besides working with cutting-edge technology, HIM professionals are experts in the field of patient health information and health records.

Health information technicians ensure the quality of health information by:

- Verifying health records completeness and accuracy and proper entry into computer systems.
- Utilizing computer applications to assemble and analyze patient data.
- Coding diagnoses and procedures for reimbursement and research.
- Compiling and maintaining registry data.
- Assuring patient privacy and data security.

**Wages/Outlook/Advancement**

The U.S. Department of Labor Statistics, in its Occupational Outlook Handbook, projects that employment for health information

# Health Information Technology

Associate of Applied Science (AAS) Degree

technicians is expected to grow much faster than the average. Credentialed health information technicians (RHITs) can look forward to many expanding career opportunities due to increasing patient privacy/data security legislation and computerization of health information.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
Spring Semester.....January

### MnTC General Education

Fifteen (15) credits of general education credits from the Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

*Note: MnTC credits are listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*

### Program Sequence

<b>First Semester</b> .....	<b>17</b>
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1181 Microsoft Access .....	2
<input type="checkbox"/> HITM 1110 Medical Terminology in Health Information.....	3
<input type="checkbox"/> HITM 1130 ICD-10-CM Coding .....	3
<input type="checkbox"/> HITM 1221 Intro to Health Information Management .....	3
<input type="checkbox"/> HLTH 1005 Anatomy & Physiology .....	4
<b>Second Semester</b> .....	<b>15</b>
<input type="checkbox"/> BIOL 1106 Principles of Biology .....	4
<input type="checkbox"/> HITM 1230 ICD-10-PCS Coding.....	3
<input type="checkbox"/> HITM 1240 CPT Coding .....	3
<input type="checkbox"/> HLTH 1000 Disease Conditions .....	2
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College .....	3
<b>Third Semester</b> .....	<b>17</b>
<input type="checkbox"/> HITM 1200 Billing and Reimbursement .....	2
<input type="checkbox"/> HITM 1244 Law and Ethics .....	2
<input type="checkbox"/> HITM 1250 Advanced Coding .....	2
<input type="checkbox"/> HITM 2000 Health Information and Statistics .....	3
<input type="checkbox"/> MnTC English transferable course.....	3
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	5
<b>Fourth Semester</b> .....	<b>15</b>
<input type="checkbox"/> HITM 1210 Supervision of Health Information .....	3
<input type="checkbox"/> HITM 1325 Quality & Performance Improvement in Healthcare .....	3
<input type="checkbox"/> HITM 2240 Computerized Health Information .....	3
<input type="checkbox"/> HITM 2245 Health Care Statistic and Data Registries .....	3
<input type="checkbox"/> HITM 2261 Professional Practice Experience .....	3

### Faculty Contact

[Georgina Sampson](#)..... 763-576-4042  
[Jody Sandberg](#)..... 763-576-4066

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Medical Coding diploma and Health Unit Coordinator certificate*

## Program Information

The Anoka Technical College Medical Coding Specialist diploma program is a 41-credit program that prepares students to assume an entry-level position as a medical coder in an acute care hospital, clinic or physician’s office health care setting.

## Program Learning Outcomes

- Essential professional and technical knowledge.
- Effective written and oral communication skills.
- Skills in using resources and technology.
- Problem solving.
- Teamwork.
- Critical thinking skills.
- Eligible to work in any healthcare setting.
- Eligible to sit for the CCA exam.

## Accreditation

The Medical Coding Specialist diploma can prepare students to sit for the national certification examination to become a Certified Coding Associate (CCA) or the Certified Procedural Coding-Apprentice (CPC-A) credentials.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

## Background Study

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct contact with patients as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. The college will withdraw any student who is disqualified by the Minnesota Department of Health. The student is responsible for requesting the Commissioner to reconsider the disqualification.

## Graduation Requirements

All Anoka Technical College students seeking a Diploma in Medical Coding Specialist must earn a grade of “C” or higher in every course in the program.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Graduates of the Medical Coding Specialist diploma program will:

1. Analyze medical record documentation in order to assign diagnostic and procedures codes.

2. Provide important information for the health care reimbursement process.
3. Assist in medical research and statistics.

Medical coding specialists analyze health record documentation in order to assign and/or ensure that valid codes are applied to medical diagnoses and procedures to facilitate reimbursement, analysis of patient outcomes and statistics. The coding specialist must have a thorough understanding of the content of the health record in order to be able to locate information to support or provide specificity for coding.

Therefore, coding specialists receive training in the anatomy and physiology of the human body and disease processes in order to understand the etiology, pathology, symptoms, signs, diagnostic studies, treatment modalities, and prognosis of diseases and procedures to be coded.

## Wages/Outlook/Advancement

The U.S. Department of Labor Statistics, in its Occupational Outlook Handbook, projects that employment for health information technicians is expected to grow much faster than the average. Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
Spring Semester .....January

## Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> ADSC 1171 Excel .....	2
<input type="checkbox"/> HITM 1110 Medical Terminology in Health Information.....	3
<input type="checkbox"/> HITM 1130 ICD-10-CM Coding.....	3
<input type="checkbox"/> HITM 1221 Intro to Health Information Management.....	3
<input type="checkbox"/> HLTH 1005 Anatomy and Physiology .....	4
<b>Second Semester</b> .....	<b>14</b>
<input type="checkbox"/> HITM 1230 ICD-10-PCS Coding .....	3
<input type="checkbox"/> HITM 1240 CPT Coding .....	3
<input type="checkbox"/> HLTH 1000 Disease Conditions .....	2
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College .....	3
<input type="checkbox"/> <a href="#">MnTC</a> English .....	3
<b>Third Semester</b> .....	<b>12</b>
<input type="checkbox"/> HITM 1200 Billing and Reimbursement .....	2
<input type="checkbox"/> HITM 1244 Law and Ethics .....	2
<input type="checkbox"/> HITM 1250 Advanced Coding .....	2
<input type="checkbox"/> HITM 1260 Professional Practice for Coding Specialist.....	3
<input type="checkbox"/> <a href="#">MnTC</a> General Education Elective .....	3

## Faculty Contact

[Georgina Sampson](#) ..... 763-576-4042  
[Jody Sandberg](#) ..... 763-576-4066

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Health Information Technology AAS and Health Unit Coordinator certificate*



## Program Information

The Anoka Technical College Health Technology certificate is a 26-credit program that provides students with skills to secure an entry-level position in the health care field (nursing assistant, phlebotomist, and home health aide) or allow students to engage in coursework that will transfer into the different health programs.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Interact in complex environment.
- Apply critical thinking skills.
- Communicate in diverse settings.
- Recognize teamwork/collaboration as an integral part of the health care delivery.
- Demonstrate professional behavior.
- Provide safe, patient-centered care.

## Course Prerequisites

Some courses may require an Accuplacer score or completing basic math, basic English, and/or reading courses with a “C” or better.

## Background Study

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. Anoka Tech will withdraw any student from the program who is disqualified by the Minnesota Department of Health. The student is responsible for requesting the Commissioner to reconsider the disqualification.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

According to the Minnesota Department of Education and the Minnesota Department of Employment and Economic Development, people in entry-level health care careers are people who tend to:

- Consider relationships important. They like to work in a friendly, non-competitive environment. They like to do things for other people. They prefer jobs where they are not pressured to do things that go against their sense of right and wrong.
- Consider good working conditions important. They like jobs offering steady employment and good pay. They want employment that fits their individual work style. They may prefer doing a variety of tasks, working alone, or being busy all the time.
- Have social interests. They like work activities that assist others and promote learning and personal development. They like to communicate with others: to teach, give advice, help, or otherwise be of service to others.
- Have realistic interests. They like work activities that include practical, hands-on problems and solutions. They like to work with plants, animals, and physical materials such as wood, tools, and machinery. They often prefer to work outside.

Employers look for entry-level health care personnel who like to help people and do not mind hard work. Employees must be responsible, compassionate, emotionally stable and cheerful. They also need to be tactful, honest, and discreet about patients’ private lives.

## Start Dates

Fall Semester ..... August  
 Spring Semester ..... January  
 Summer Semester ..... May/June

## MnTC General Education

Seven (7) general education credits of Minnesota Transfer Curriculum (MnTC) are required. Student is required to take:

- ENGL 1107 Composition I ..... 4
- The remaining three credits may be selected from the following:
- SPCH 1120 Public Speaking ..... 3
- SPCH 1200 Interpersonal Communications ..... 3
- SPCH 1500 Intercultural Communications ..... 3

## Technical Education Credits

**Must complete one of the following courses:**

- HLTH 1101 TMA- Trained Medication Aide ..... 3
- HLTH 1103 Nursing Assistant/Home Health Aide ..... 5

**Select from the following to equal nine (9) HLTH credits:**

- HLTH 1000 Disease Conditions ..... 2
- HLTH 1005 Anatomy & Physiology ..... 4
- HLTH 1040 Medical Terminology ..... 2
- HLTH 1101 TMA- Trained Medication Aide ..... 3
- HLTH 1103 Nursing Assistant/Home Health Aide ..... 5
- HLTH 1110 Introduction to ECGs ..... 1

**Select ten (10) credits from the following:**

- ADSC 1055 Electronic Health Records ..... 2
- BIOL 1106 Principles of Biology ..... 4
- BIOL 1130 Human Biology ..... 4
- BIOL 2100 Anatomy & Physiology I ..... 4
- BIOL 2200 Anatomy & Physiology II ..... 4



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2021-2022

# Health Technology

Certificate

- COMP 1002 Computer Technologies for Communication ..... 2
- EMED 1076 BLS for the Healthcare Provider..... 1
- MATH 1010 Dosage Calculations for Health Care Professionals ..... 1
- PSYC 1406 General Psychology ..... 4
- PSYC 1506 Lifespan Development ..... 4

### Faculty Contact

- [Cathy Bishop](#)..... 763-576-4009
- [Teresa Dill](#)..... 763-576-4136
- [Sara Rowe](#)..... 763-576-4127

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

**Program Information**

The Anoka Technical College Nursing Assistant/Home Health Aide certificate is a five (5)-credit course that introduces concepts of basic human needs, basic nursing and personal care skills, mental health and social needs, restorative services, resident’s rights, and home health. The skills are performed in a supervised laboratory and long term care clinical setting. The course meets the requirements of the federal government and the Minnesota Board of Nursing. Upon completion of the competency evaluation, students can be employed in a long-term care facility, hospital or home health agency.

**Course Prerequisites**

None.

**Background Study**

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. The college will withdraw any student who is disqualified by the Minnesota Department of Health. The student is responsible for requesting the Commissioner to reconsider the disqualification.

**Registration Process**

Please register online.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Books and Supplies**

- Nursing assistant book and skills packet available through the Anoka Technical College bookstore.
- Student photo ID card.
- Black uniforms for the clinical training sites.
- Watch with a second hand and a box of non-latex exam gloves.

**Reimbursable Expenses**

Note from the Minnesota Department of Health regarding reimbursable expenses: Nursing assistants who pay for the cost of their training and testing prior to employment are eligible for reimbursement. The nursing assistant has one (1) year from completion of the test to turn in receipts requesting reimbursement. The facility has 90 days to reimburse the nursing assistant. If the nursing assistant does not remain employed as a nursing assistant for 90 days, the nursing home is under no obligation to reimburse the nursing assistant. The first nursing home the nursing assistant stays at for at least 90 days would then be responsible to reimburse the nursing assistant if it has been one year or less since completion of the test. Only certified nursing homes or boarding care homes are required to reimburse a nursing assistant.

**Industry Information**

Upon completion of the competency evaluation, a student can be employed in a long term care facility, hospital, home health agency or assisted living facility.

**Start Dates**

Fall Semester.....August  
Spring Semester .....January  
Summer Semester ..... May/June

**Program Sequence**

First Semester ..... 5  
 HLTH 1103 Nursing Assistant/Home Health Aide..... 5

**Faculty Contact**

[Teresa Dill](#)..... 763-576-4136

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)  
*Also see: Health Technology Certificate*

**Program Information**

The Anoka Technical College Medical Assistant Associate of Applied Science (AAS) degree includes the accredited 37-credit diploma. This program prepares students to be a professional, multi-skilled medical assistant who is dedicated to assist in patient care management.

Graduates are prepared to assist medical providers with examinations and treatments, conduct medical histories, perform Clinical Laboratory Improvement Amendments (CLIA) waived testing, sterilize instruments and supplies, assist with minor surgery, medical office administrative services and administer medications. Graduates of the Medical Assistant program are eligible to take the Certification Exam of the American Association of Medical Assistants (AAMA).

Upon graduation, students will earn both an accredited diploma and the Associate of Applied Science (AAS) degree. The 27 credits of general education are Minnesota Transfer Curriculum (MnTC) courses for students who wish to continue advanced healthcare education.

**Program Learning Outcomes**

The goal of the Anoka Technical College Medical Assistant is to produce graduates who:

- Demonstrate knowledge of clinical procedures, laboratory and medication administration in a medical practice utilizing critical thinking skills.
- Apply knowledge of medical laboratory techniques to accurately collect specimens, perform Clinical Laboratory Improvement Amendments (CLIA) waived testing, and report lab results appropriately.
- Communicate effectively with individuals, families, groups, and/or colleagues of diverse sociocultural backgrounds through the use of verbal and non-verbal skills, written abilities, active listening, and information technologies within ambulatory care settings.
- Identify, interpret, and apply ethical, legal and social issues associated within the field of a medical assistant scope of practice.
- Employ a variety of administrative policies, procedures and techniques in a medical practice to deliver cost effective and quality healthcare.
- Professionally demonstrate confidentiality, communicate effectively, collaborating within teams along with professionalism.
- Use computer literacy skills and the ability to maintain electronic health records.
- Illustrate a caring and empathic approach to all people and cultures when interacting with a diverse patient population in the healthcare field.
- Reinforce healthy lifestyles through health promotion education of teaching individuals, families, and the community.
- Successful completion of the AAS degree will provide transferable credits that allow students to continue their higher education.

**Admission Requirements****Successfully complete Accuplacer assessment requirement (2)**

- Score of 275 or higher on the Arithmetic portion of the NextGen Accuplacer or Anoka Tech Math 0801 with a grade of "B" or better or equivalent test score taken within the past 2 years.

- Score of 250 or higher on the Reading portion of the NextGen Accuplacer or ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 taken in the last three years or appropriate test score.

**Program Externship Requirements**

Students entering into the externship must have immunizations such as Hepatitis B, MMR, Varicella and Tdap. Also, must be current in First Aid/BLS CPR through the American Heart Association for Healthcare Providers. See Medical Assistant Handbook or advisor for further information.

**Accreditation/Cerification**

The Anoka Technical College Medical Assistant diploma program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Medical Assisting Education Review Board (MAERB).

Commission on Accreditation of Allied Health Programs (CAAHEP): 9355 135th St N, #7709, Seminole, FL 33775; 727-210-2350; [www.caahep.org](http://www.caahep.org).

Graduates can take the National Certification Examination to become certified with the American Association of Medical Assistants (AAMA).

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a "C" or better.

**MAST 1300:** Basic Computer Keyboarding or 25 wpm keyboarding ability or equivalent

**MAST 1601 and 1700:** Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider (must be current throughout the externship).

**Background Studies**

Minnesota Law requires any person with direct patient and resident contact at a health care facility licensed by the Minnesota Department of Health (MDH) to have a background study conducted by the state. An individual disqualified from direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. Anoka Technical College will withdraw any student from the Medical Assistant program who is disqualified by the MDH. The student is then responsible for requesting the commissioner to reconsider the disqualification.

**Graduation Requirements**

Anoka Technical College students seeking an Associate in Applied Science (AAS) or diploma in Medical Assistant must complete all of the required courses as outlined on the program plan with a C or better grade in each course.

# Medical Assistant

Associate in Applied Science (AAS) Degree

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

A medical assistant is eligible to work in clinics, urgent care/express care/minute clinics, blood collection centers, research facilities and insurance companies. Duties could include administering injections, and blood pressure readings, rooming patients, drawing blood, performing commonly ordered laboratory tests and electrocardiograms (EKG), insurance coding, medical records and scheduling patients for special procedures or other medical appointment.

Medical assistants have direct patient contact and work closely with physicians, nurses and other health care professionals. The ability to demonstrate professionalism, communicate effectively, multi-task, and perform procedures quickly and accurately is essential for success.

Advancement typically requires more training and certification. Many medical assistants choose to become nurses or other health care workers through further study. Administrative positions provide another popular career path because an administrative medical assistant can rise to the position of office manager without additional education.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## MnTC General Education & Elective Courses

Students can choose [Minnesota Transfer Curriculum \(MnTC\)](#) and/or elective courses to add up to 23 credits. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

*Note: MnTC or elective credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*

- COMM 1055 Strengths and Wellness ..... 3
- PSYC 1406 General Psychology ..... 4
- PSYC 1506 Lifespan Development ..... 4
- SPCH 1200 Interpersonal Communication ..... 3
- SPCH 1500 Intercultural Communications ..... 3
- SOSC 1010 Introduction to Sociology ..... 3
- SOSC 2000 Sociology of Work ..... 4
- BIOL 1106 Principles of Biology ..... 4
- BIOL 2100 Anatomy & Physiology I..... 4
- BIOL 2200 Anatomy & Physiology II..... 4
- OR Elective course(s):
- EMED 1076 BLS for Healthcare Provider ..... 1
- HLTH 1110 ECG ..... 1

## Program Sequence

Course with MAST prefix are restricted to students admitted to the Medical Assistant program. All required core coursework must be successfully completed before participating in the externship.

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> ENGL 1107 Composition I .....	4
<input type="checkbox"/> HLTH 1005 Anatomy and Physiology.....	4
<input type="checkbox"/> HLTH 1040 Medical Terminology.....	2
<input type="checkbox"/> MATH 1010 Dosage Calculations .....	1
<input type="checkbox"/> MnTC General Education Elective .....	4
<b>Second Semester</b> .....	<b>16</b>
<input type="checkbox"/> MAST 1200 Medical Assistant Seminar .....	2
<input type="checkbox"/> MAST 1301 Medical Administrative for Medical Assistants... 4	
<input type="checkbox"/> MAST 1401 Introduction to Pharmacology .....	2
<input type="checkbox"/> MnTC General Education Elective .....	8
<b>Summer Semester</b> .....	<b>7</b>
<input type="checkbox"/> MnTC General Education Elective .....	7
<b>Third Semester</b> .....	<b>16</b>
<input type="checkbox"/> MAST 1601 Laboratory I .....	3
<input type="checkbox"/> MAST 1700 Clinical Procedures I.....	3
<input type="checkbox"/> MAST 2601 Laboratory II.....	3
<input type="checkbox"/> MAST 2701 Clinical Procedures II .....	3
<input type="checkbox"/> MnTC General Education Elective .....	4
<b>Fourth Semester</b> .....	<b>6</b>
<input type="checkbox"/> MAST 2901 Externship.....	6

## Faculty Contact

- [Lisa Sailor](#) ..... 763-576-4084
- [Stacey Wanovich](#)..... 763-576-4132
- [Deb Lehew](#)..... 763-576-4026

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*Also see: Medical Assistant Diploma*



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**Program Information**

The Anoka Technical College Medical Assistant accredited diploma is a 37-credit program that prepares students to be a professional, multi-skilled medical assistant who is dedicated to assist in patient care management. Graduates are prepared to assist medical providers with examinations and treatments, conduct medical histories, perform Clinical Laboratory Improvement Amendments (CLIA) waived testing, sterilize instruments and supplies, assist with minor surgery, medical office administrative services and administer medications.

Graduates of the Medical Assistant program are eligible to take the Certification Exam of the American Association of Medical Assistants (AAMA).

**Program Learning Outcomes**

Upon successful completion of program requirements, graduates will be able to:

- Demonstrate knowledge of clinical procedures, laboratory and medication administration in a medical practice utilizing critical thinking skills.
- Apply knowledge of medical laboratory techniques to accurately collect specimens, perform Clinical Laboratory Improvement Amendments (CLIA) waived testing, and report lab results appropriately.
- Communicate effectively with individuals, families, groups, and/or colleagues of diverse sociocultural backgrounds through the use of verbal and non-verbal skills, written abilities, active listening, and information technologies within ambulatory care settings.
- Identify, interpret, and apply ethical, legal and social issues associated within the field of a medical assistant scope of practice.
- Employ a variety of administrative policies, procedures and techniques in a medical practice to deliver cost effective and quality healthcare.
- Professionally demonstrate confidentiality, communicate effectively, collaborating within teams along with professionalism.
- Use computer literacy skills and the ability to maintain electronic health records.
- Illustrate a caring and empathic approach to all people and cultures when interacting with a diverse patient population in the healthcare field.
- Reinforce healthy lifestyles through health promotion education of teaching individuals, families, and the community.

**Admission Requirements****Successfully complete Accuplacer assessment requirement (2)**

- Score of 275 or higher on the Arithmetic portion of the NextGen Accuplacer or Anoka Tech Math 0801 with a grade of “B” or better or equivalent test score taken within the past 2 years.
- Score of 250 or higher on the Reading portion of the NextGen Accuplacer Or ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 taken in the last three years or appropriate test score.

**Program Externship Requirements**

Students entering into the externship must have immunizations such as Hepatitis B, MMR, Varicella and Tdap. Also, must be current in First Aid/BLS CPR through the American Heart Association for Healthcare Providers. See *Medical Assistant Handbook* or advisor for further information.

**Accreditation/Certification**

The Medical Assistant program is nationally accredited by the Commission on Accreditation of Allied Health Programs (CAAHEP):9355 135th St N, #7709, Seminole, FL 33775; 727-210-2350; www.caahep.org. Graduates can take the National Certification Examination to become certified with the American Association of Medical Assistants (AAMA).

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

**MAST 1300:** Basic Computer Keyboarding or 25 wpm keyboarding ability or equivalent

**MAST 1601 and 1700:** Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider (must be current throughout the externship).

**MAST 2601 and 2701:** A complete immunization record or immunity that is set in place by the Minnesota Department of Health and the Centers for Disease Control and Prevention. See Medical Assistant student handbook at: <https://www.anokatech.edu/-/media/Files/New-Web-Site-Files/Programs-and-Courses/Health/Medical-Assistant-Program-Handbook.ashx?la=en&hash=92138AA8B1472DEFD7193CEA08CCF8483E038164>

**MAST 2901: TB blood tests**

- Documentation of negative QuantiFERON®-TB Gold test (QFT-G), QuantiFERON®-TB Gold In-Tube test (GFT-GIT) or T-SPOT®.

**Documentation Requirements**

*If the test is positive, the individual must have the following:*

- A negative chest x-ray within six months prior to beginning of the clinical experience. This test may be required more frequently by clinical site requirements.
- Documentation from a medical provider will be required to work with patients.

**Background Studies**

Minnesota Law requires any person with direct patient and resident contact at a health care facility licensed by the Minnesota Department of Health (MDH) to have a background study conducted by the state. An individual disqualified from direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in a Minnesota licensed health care facility. Anoka Technical College will withdraw any student from the Medical

# Medical Assistant

Diploma

Assistant program who is disqualified by the MDH. The student is then responsible for requesting the commissioner to reconsider the disqualification.

## Graduation Requirements

Anoka Technical College students seeking an Associate in Applied Science (AAS) or Medical Assistant diploma must complete all of the required courses as outlined on the program plan with a C or better grade in each course.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

A medical assistant is eligible to work in clinics, urgent care/express care/minute clinics, blood collection centers, research facilities and insurance companies. Duties could include administering injections, and blood pressure readings, rooming patients, drawing blood, performing commonly ordered laboratory tests and electrocardiograms (EKG), insurance coding, medical records and scheduling patients for special procedures or other medical appointment.

Medical assistants have direct patient contact and work closely with physicians, nurses and other health care professionals. The ability to demonstrate professionalism, communicate effectively, multi-task, and perform procedures quickly and accurately is essential for success. Advancement typically requires more training and certification. Many medical assistants choose to become nurses or other health care workers through further study. Administrative positions provide another popular career path because an administrative medical assistant can rise to the position of office manager without additional education.

## Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## Program Sequence

*Course with MAST prefix are restricted to students admitted to the Medical Assistant program. All required core coursework must be successfully completed before participating in the externship.*

**First Semester ..... 17**

- ENGL 1107 Composition I..... 4
- HLTH 1005 Anatomy and Physiology ..... 4
- HLTH 1040 Medical Terminology ..... 2
- MAST 1200 Medical Assistant Seminar ..... 2
- MAST 1301 Medical Administrative for Medical Assistants .. 4
- MATH 1010 Dosage Calculations ..... 1

**Second Semester..... 14**

- MAST 1401 Introduction to Pharmacology ..... 2
- MAST 1601 Laboratory I..... 3
- MAST 1700 Clinical Procedures I ..... 3
- MAST 2601 Laboratory II..... 3
- MAST 2701 Clinical Procedures II..... 3

**Third Semester ..... 6**

- MAST 2901 Externship..... 6

## Faculty Contact

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<a href="#">Stacey Wanovich</a> .....	763-576-4132
<a href="#">Deb LeHew</a> .....	763-576-4026

For information on how to apply, to schedule a tour, or for service during summer hours, Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Medical Assisant AAS*



**Program Information**

The Anoka Technical College Associate of Applied Science (AAS) degree in Medical Office Specialist prepares students with the broad range of technical and communications skills needed for success in today's office work environment with specific study in medical terminology, electronic health records software, and medical office procedures. This coursework includes learning practice management software to include setting patients' appointments, maintaining physicians' calendars, billing and messaging, as well as specific interpersonal communications skills necessary in a medical setting. Students gain competence in word processing, spreadsheet, database and presentation software. Keyboarding speed and accuracy is developed while grammar, punctuation and writing skills are polished. Students graduate from the program well prepared for employment in any medical office environment.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

1. Exhibits effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Demonstrate the ability to perform mathematical calculations necessary in business applications including accounting, by working with percentages; decimals and fractions; understanding accounting principles as they are applied to business office bookkeeping; and using formulas for creating spreadsheets and databases.
9. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.

10. The Medical Office Specialist AAS degree includes all technical courses along with 15 Minnesota Transfer Curriculum general education credits to help provide a well-rounded education. The completion of a degree shows commitment and dedication and can be advantageous for students seeking jobs beyond entry level or with employers who require a degree.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a "C" or better.

- ADSC 1003 Introduction to Keyboarding and Speedbuilding is a prerequisite to ADSC 10101 Keyboarding I.
- ADSC 1031 Business English Skills prerequisite of READ 0900 or READ 0960 or appropriate test score.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

**Industry Information**

The work of a Medical Office Specialist supports the efficient functioning of any medical-related office position. The medical office professional applies the knowledge of customer-service techniques, medical terminology, health insurance rules, and medical billing procedures to perform a wide variety of functions. Job responsibilities may include greeting patients and screening calls, scheduling patient appointments and arranging referrals, billing patients and third-party payers, processing insurance forms, controlling accounts receivables, transcribing dictation, preparing medical reports, patient histories, operative notes, manuscripts, and correspondence, maintaining office files and patient records, making calls for physicians and other health care personnel, arranging hospital admissions, scheduling surgeries, and arranging physicians' meetings and conferences.

Potential locations for employment include medical clinics, hospitals, nursing homes, insurance companies, private physician practices, public health clinics, rehab centers, medical laboratories, medical supplies and equipment businesses, and pharmaceutical companies.

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

# Medical Office Specialist

Associate of Applied Science (AAS) Degree

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## MnTC General Educaiton

Twelve (12) credits of general education credits from the [Minnesota Transfer Curriculum \(MnTC\)](#) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

**Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.**

## Program Sequence

<b>First Semester</b> .....	<b>16</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding and Speedbuilding .....	2
<input type="checkbox"/> ADSC 1055 Electronic Health Records .....	2
<input type="checkbox"/> ADSC 1283 Medical Office Procedures.....	4
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication.....	2
<input type="checkbox"/> HITM 1110 Medical Terminology for Health Information .....	3
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College .....	3
<b>Second Semester</b> .....	<b>14</b>
<input type="checkbox"/> ADSC 1010 Keyboarding I .....	3
<input type="checkbox"/> ADSC 1031 Business English Skills .....	3
<input type="checkbox"/> ADSC 1045 Administrative Office Procedures .....	4
<input type="checkbox"/> ADSC 1206 Written Business Communications.....	4
<b>Third Semester</b> .....	<b>14</b>
<input type="checkbox"/> ADSC 1162 Microsoft PowerPoint.....	2
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1181 Microsoft Access .....	2
<input type="checkbox"/> ADSC 1197 Microsoft Word .....	4
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	4
<b>Fourth Semester</b> .....	<b>16</b>
<input type="checkbox"/> ADSC 1054 Office Bookkeeping .....	4
<input type="checkbox"/> ADSC 1142 Integrated Software Applications .....	4
<input type="checkbox"/> <a href="#">MnTC General Education Elective</a> .....	8

## Faculty Contact

[Darla Cullen](#)..... 763-576-4018  
[Deb Catlett](#)..... 763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Medical Coding diploma, Medical Receptionist diploma, and Health Unit Coordinator (HUC) certificate*

### Program Information

The Anoka Technical College Medical Receptionist diploma prepares students with the broad range of technical and communications skills needed for success in today’s office work environment with specific study in medical terminology, electronic health records software, and medical office procedures. This coursework includes learning practice management software to include setting patients’ appointments, maintaining physicians’ calendars, billing and messaging, as well as specific interpersonal communications skills necessary in a medical setting. Students gain competence in word processing, spreadsheet, database and presentation software. Keyboarding speed and accuracy is developed while grammar, punctuation and writing skills are polished. Students graduate from the program well prepared for employment in any medical office environment.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Exhibits effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Demonstrate the ability to perform mathematical calculations necessary in business applications including accounting, by working with percentages; decimals and fractions; understanding accounting principles as they are applied to business office bookkeeping; and using formulas for creating spreadsheets and databases.
9. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally. The Medical Receptionist diploma continues from the certificate with additional technical coursework therefore preparing students with a wider range of job-specific skills.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

- ADSC 1003 Introduction to Keyboarding and Speedbuilding is a prerequisite to ADSC 10101 Keyboarding I.
- ADSC 1031 Business English Skills prerequisite of READ 0900 or READ 0960 or appropriate test score.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

In this fast-growing health care field, the medical receptionist functions in physicians’ offices, health clinics, outpatient facilities, medical laboratories, hospitals, health insurance companies, medical supplies and equipment businesses, and pharmaceutical companies.

Minnesota Law requires that any person who provides services that involve direct contact with patients and residents at a health care facility licensed by the Minnesota Department of Health have a background study conducted by the state.

Job duties/skills may include the following: transcribing medical documents/reports, composing and processing correspondence, accounting payments and posting charges, coding of diagnoses and procedures, processing insurance claims, coordinating patient care, scheduling patient appointments, recording and relaying messages, maintaining various financial records, maintaining patient files, making calls for physicians and other healthcare personnel, arranging hospital admissions, scheduling surgeries, using automated record system to access, entering and editing patient information, and arranging physicians’ meetings and conferences.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
Spring Semester .....January

# Medical Receptionist

Diploma

## Program Sequence

<b>First Semester</b>	<b>16</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding and Speedbuilding	2
<input type="checkbox"/> ADSC 1055 Electronic Health Records	2
<input type="checkbox"/> ADSC 1283 Medical Office Procedures	4
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication	2
<input type="checkbox"/> HITM 1110 Medical Terminology for Health Information	3
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College	3
<b>Second Semester</b>	<b>16</b>
<input type="checkbox"/> ADSC 1010 Keyboarding I	3
<input type="checkbox"/> ADSC 1031 Business English Skills	3
<input type="checkbox"/> ADSC 1045 Administrative Office Procedures	4
<input type="checkbox"/> ADSC 1162 Microsoft PowerPoint	2
<input type="checkbox"/> ADSC 1206 Written Business Communications	4
<b>Third Semester</b>	<b>16</b>
<input type="checkbox"/> ADSC 1054 Office Bookkeeping	4
<input type="checkbox"/> ADSC 1142 Integrated Software Applications	4
<input type="checkbox"/> ADSC 1171 Microsoft Excel	2
<input type="checkbox"/> ADSC 1181 Microsoft Access	2
<input type="checkbox"/> ADSC 1197 Microsoft Word	4

## Faculty Contact

[Darla Cullen](#) ..... 763-576-4018  
[Deb Catlett](#) ..... 763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Medical Office Specialist AAS degree, Medical Coding Specialist diploma, and Health Unit Coordinator (HUC) certificate*

### Program Information

The Health Unit Coordinator (HUC) provides exceptional customer service to patients and visitors through welcoming behaviors, effective communication, and information sharing. HUCs work as part of a team often under the supervision of a physician or nurse manager to ensure that documentation of patient care and progress in electronic health records software is completed accurately and efficiently. The Health Unit Coordinator certificate program at Anoka Technical College prepares students to perform the duties of a unit coordinator in a health care facility.

Upon graduation, students will be prepared to work in this position through completion of coursework in introductory computer applications, medical terminology as used in health information, and electronic health records software. Medical Office Procedures coursework provides students with more in-depth learning in HIPAA (Health Insurance Portability and Accountability Act) regulations and applications, abbreviations for various physician specialists, health care organizations, and hospital departments as well as concepts of effective communication. Through critical thinking curriculum, students will develop an understanding of the workplace behaviors necessary to be a positive team member in a professional workplace and how time-management and prioritizing skills are crucial to effectively managing workflow. Practice Management software training takes students through a complete cycle of scenarios from entering new patient information through batch-cycle billing.

### Program Learning Outcomes

The Health Unit Coordinator graduate will achieve the following learning outcomes.

1. Demonstrate knowledge of medical terminology and abbreviations as used in health information.
2. Articulate HIPAA (Health Insurance Portability and Accountability Act) and patient confidentiality requirements and necessity of use.
3. Differentiate between hospital departments, medical specialties, and health care organizations.
4. Utilize computer software, including Electronic Health Records software, to effectively and efficiently process patient and department/unit information and communications.
5. Apply the behaviors critical for performing as a positive, contributing member of a health care team.
6. Employ time management and critical thinking skills necessary to prioritize needs to effectively manage work flow according to department policies, procedures, and standards.
7. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
8. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.

### Course Prerequisites

Some courses may require appropriate score or completion of basic math, basic English and/or reading courses with a "C" or better.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Industry Information

The Health Unit Coordinator (HUC) is responsible for coordinating non-clinical operations and facilitates communication between staff, patients, families and care providers, and between the unit and other departments.

Potential locations for employment include hospitals, nursing homes, medical clinics, insurance companies, private physician practices, public health clinics, rehab centers, and more. The HUC role involves a wide range of responsibilities that vary based on the medical setting. A HUC must possess professionalism in both appearance and interaction with others as well as provide exceptional customer service to patients and visitors. They must demonstrate the ability to work quickly in a fast-paced patient care setting and work accurately and efficiently with attention to details while maintaining patient confidentiality. HUCs must be able to utilize computer software including Electronic Health Records software, possess knowledge of HIPAA (Health Insurance Portability and Accountability Act) rules and patient confidentiality requirements, and knowledge of medical terminology as used in health information. They must also demonstrate excellent organizational and communication skills with ability to focus on keeping effective work flow. Possessing strong interpersonal skills and attributes of a team player are a must for a Health Unit Coordinator position.

### Start Dates

Fall Semester ..... August  
 Spring Semester ..... January



# Health Unit Coordinator

Certificate

## Program Sequence

<b>First Semester</b>	.....	<b>16</b>
<input type="checkbox"/> ADSC 1003	Introduction to Keyboarding and Speedbuilding.	2
<input type="checkbox"/> ADSC 1055	Electronic Health Records	2
<input type="checkbox"/> ADSC 1283	Medical Office Procedures	4
<input type="checkbox"/> COMP 1002	Computer Technologies for Communication	2
<input type="checkbox"/> HITM 1110	Medical Terminology in Health Information	3
<input type="checkbox"/> INTS 1000	Critical Thinking Applications for College	3

## Faculty Contact

<a href="#">Darla Cullen</a>	.....	763-576-4018
<a href="#">Deb Catlett</a>	.....	763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Health Information Technology (HIT) AAS, Medical Coding Specialist diploma, Medical Office Specialist AAS, and Medical Receptionist diploma*

**Program Information**

The Anoka Technical College Associate of Applied Science (AAS) degree in Occupational Therapy Assistant is a 71-credit program. Course work includes a combination of general education courses, occupational therapy theory and skill building courses, and on-the-job experiences at various fieldwork sites. Students must provide their own transportation to and from the fieldwork sites. All academic coursework must be completed before students are placed on their Level II fieldwork experience. The Level II fieldwork must be completed within 6 months of completing the required coursework. Enrollment in the fieldwork classes may be limited due to the availability of fieldwork sites.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

1. Practice using innovative and evidence-based interventions within the role of the entry-level Occupational Therapy Assistant.
2. Demonstrate professional attributes, ethical standards, and values of the profession.
3. Deliver competent services/outcomes by using reflection, strengths, client centered and occupation based interventions, and critical and creative thinking.
4. Collaborate inter/intra professionally.
5. Work with people from diverse backgrounds in a variety of practice settings serving the community.

**Accreditation/Certification**

The Occupational Therapy Assistant program at Anoka Technical College is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929, ACOTE's phone number, C/O AOTA, is 301-652-AOTA, and its web address is [www.acoteonline.org](http://www.acoteonline.org).

Graduates of the program are eligible to sit for the national certification examination for the occupational therapy assistant administered by the [National Board for Certification in Occupational Therapy \(NBCOT\)](http://www.nbcot.org). After successful completion of the exam, the individual is a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice. However, state licenses are usually based on the results of the NBCOT Certification Examination. A felony conviction may affect a graduate's ability to sit for the NBCOT certification exam or attain state licensure.

**Admission Requirements**

All required documentation must be submitted in person or email, or US Postal. See OTA web page for details.

Admission criteria:

Option 1

1. Apply to Anoka Technical College and be admitted to the college
2. Complete appropriate test scores and the Test of Essential Academic Skills for Allied Health (ATI-TEAS).
3. Certificate of Attendance from Information Session

Option 2: Students who have bachelor's or master's degree

1. Apply to Anoka Technical College and be admitted to the college
2. Submit an official transcript of Bachelor's or Master's degree
3. Certificate of Attendance from Information Session

**Background Study**

Minnesota state law requires that any person who provides services that involve direct contact with patients and/or residents at a health care facility have a background study conducted by the state. A student who is disqualified as a result of a background check will not be allowed to enter the program major. A student must receive a "Background Study Clearance" within 90 days preceding the start of clinical or fieldwork courses to be placed at a partnering facility. Any student failing to receive clearance will be disqualified from enrollment in the course. Arrests, charges, or convictions of criminal offenses may cause a student to fail a background study. If a student is disqualified, the student has the right to request reconsideration of the disqualification. See program policies for more details.

**Graduation Requirements**

Successful completion of the Occupational Therapy Assistant program with a grade of C (80%) or higher in each of the following: HLTH 1005, and each COTA course and 2.0 average or greater in required PSYC, SPCH and ENGL courses.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

**Industry Information**

Young or old, we all have a job to do – the job of living. Learning, growing, playing, working, managing our homes, and caring for our families and ourselves are among the occupations of life.

Sometimes physical, emotional, or other challenges prevent people from participating fully in the job of living. Stroke, injury, depression, and developmental disabilities, for example, can make it difficult for people to do everyday tasks or be as active and as independent as they'd like. Occupational therapy – a vibrant, growing profession – makes it possible for people to regain independence and to enjoy life to its fullest. By choosing a career in occupational therapy, you will make a difference. You will improve the lives of children, young people, and adults alike. Occupational therapy assistants work with the supervision of registered occupational therapists to provide hands-on services to children and adults who are learning new ways to succeed in the occupations of life.

Students today can look forward to dynamic careers working in varied settings with people of all ages. Many practitioners help children thrive in the "occupations" of childhood learning, playing, and growing. Some work in schools with students who have learning disabilities or behavioral problems. Others work with children who have cerebral palsy, Down Syndrome, and other disabilities.

# Occupational Therapy Assistant

Associate of Applied Science (AAS) Degree

Practitioners also work with individuals in their homes, community centers, rehabilitation hospitals, and nursing homes. In these settings, they may support people with traumatic injuries, strokes, Alzheimer’s disease, or mental health problems.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

Occupational therapy assistants may become occupational therapists. Assistants must get a master’s or doctoral degree to become an Occupational therapist.

## Start Dates

Fall Semester.....August

## Program Sequence

<b>First Semester</b>	.....	<b>15</b>
<input type="checkbox"/> COTA 1001	Introduction to Occupational Therapy .....	4
<input type="checkbox"/> COTA 1050	Clinical Conditions .....	4
<input type="checkbox"/> COTA 1105	Therapeutic Applications I.....	3
<input type="checkbox"/> HLTH 1005	Anatomy and Physiology.....	4
<b>Second Semester</b>	.....	<b>18</b>
<input type="checkbox"/> COTA 1155	Therapeutic Applications II .....	2
<input type="checkbox"/> COTA 1260	Performance Skills and Applications.....	3
<input type="checkbox"/> COTA 1270	Productive Aging/Geriatric Practice .....	4
<input type="checkbox"/> COTA 1280	Mental Health and Wellness .....	4
<input type="checkbox"/> COTA 1290	Level I Fieldwork Behavioral.....	1
<input type="checkbox"/> PSYC 1406	General Psychology .....	4
<b>Summer Semester</b>	.....	<b>11</b>
<input type="checkbox"/> ENGL 1107	Composition I .....	4
<b>OR</b>		
<input type="checkbox"/> ENGL 2105	Business and Technical Writing.....	4
<input type="checkbox"/> PSYC 1506	Lifespan Development.....	4
<input type="checkbox"/> SPCH 1500	Intercultural Communication.....	3
<b>Third Semester</b>	.....	<b>15</b>
<input type="checkbox"/> COTA 2310	Professional Seminar .....	2
<input type="checkbox"/> COTA 2330	Physical Rehabilitation Practice .....	4
<input type="checkbox"/> COTA 2340	Children and Youth Practice .....	4
<input type="checkbox"/> COTA 2350	Community Practice .....	4
<input type="checkbox"/> COTA 2390	Level I Fieldwork Traditional.....	1
<b>Fourth Semester</b>	.....	<b>12</b>
<input type="checkbox"/> COTA 2411	Level II Fieldwork Rotation A.....	6
<input type="checkbox"/> COTA 2421	Level II Fieldwork Rotation B.....	6

## Faculty Contact

<a href="#">Julie Grivna</a> .....	763-576-4262
<a href="#">Barbara Kloetzke</a> .....	763-576-4017
<a href="#">Becky Johnson</a> .....	763-576-4222

For more information about the Occupational Therapy program you can contact the Advisor’s or you can e-mail questions to [FutureOTASStudents@anokatech.edu](mailto:FutureOTASStudents@anokatech.edu)

### Program Information

The 60-credit Paramedic program at Anoka Technical College exists to educate candidates to be able to successfully complete the National Registry of Emergency Medical Technicians (NREMT) cognitive and psychomotor exams and be competent entry-level employees.

### Program Learning Outcomes

“To prepare competent entry-level Paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains with or without exit points at the Advanced Emergency Medical Technician and/or Emergency Medical Technician, and/or Emergency Medical Responder levels.”-Required by Committee on Accreditation of Emergency Medical Programs (CoA)

### Admission Requirements

Steps for the application process for Paramedic AAS:

- NextGen Reading score of 250 or higher, or equivalent test score or Associate’s or Bachelors degree
- State of MN (or current residence) EMT certificate
- Current CPR card: AHA BLS Provider, American Red Cross Basic Life Support for Healthcare Providers, or Current First Responders Card
- Medical Terminology or equivalent
- BIOL 1106 or BIOL 2100 A&P 1 or equivalent

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- EMED 1610 Pharmacology for Paramedics- Prerequisite is MATH 0801- with a grade of “C” or better, or appropriate test score.

### Graduation Requirements

Students must have a C or better in all Paramedic (EMED) course in the program plan and a C or better in Anatomy and Physiology I and II and must have an overall GPA of 2.0.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

### Industry Information

The paramedic profession is an emerging, rapidly changing profession. Paramedic work in ambulances (in populated areas) and are also working in hospitals, urgent care centers, and other areas of health care. As with other healthcare professions, the future need is great. The paramedic profession continues to evolve.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August

### Program Sequence

<b>Fall Semester</b> .....	<b>13</b>
<input type="checkbox"/> BIOL 2100 Anatomy & Physiology I .....	4
<input type="checkbox"/> EMED 1500 Operations/Trauma .....	4
<input type="checkbox"/> EMED 1505 Paramedic Skills I .....	3
<input type="checkbox"/> EMED 1510 Trauma Provider Course .....	1
<input type="checkbox"/> EMED 1515 Ambulance Clinical I .....	1
<b>Spring Semester</b> .....	<b>14</b>
<input type="checkbox"/> BIOL 2200 Anatomy & Physiology II.....	4
<input type="checkbox"/> EMED 1600 Cardiology/Pulmonology.....	4
<input type="checkbox"/> EMED 1605 Paramedic Skills II.....	3
<input type="checkbox"/> EMED 1610 Pharmacology for Paramedics .....	2
<input type="checkbox"/> EMED 1615 Advanced Cardiac Life Support .....	1
<b>Summer Semester</b> .....	<b>9</b>
<input type="checkbox"/> EMED 1700 Ambulance Clinical II.....	2
<input type="checkbox"/> EMED 1705 Hospital Clinical I.....	2
<input type="checkbox"/> EMED 1710 Support Services Clinical .....	2
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3
<b>OR</b>	
<input type="checkbox"/> SPCH 1500 Intercultural Communication.....	3
<b>Fall Semester</b> .....	<b>12</b>
<input type="checkbox"/> EMED 2500 Medical Emergencies and Special Populations ...	4
<input type="checkbox"/> EMED 2505 Paramedic Skills III .....	2
<input type="checkbox"/> EMED 2510 Emergency Department Clinical .....	2
<input type="checkbox"/> PSYC 1506 Lifespan Development .....	4
<b>Spring Semester</b> .....	<b>12</b>
<input type="checkbox"/> EMED 2600 Ambulance Clinical III .....	7
<input type="checkbox"/> EMED 2605 Pediatric Provider Course .....	1
<input type="checkbox"/> EMED 2610 Hospital Clinical II .....	2
<input type="checkbox"/> EMED 2615 Airway Clinical .....	1
<input type="checkbox"/> EMED 2620 EMS Program Summative .....	1

### Faculty Contact

[Brad Wright](#).....763-576-4058  
[Jeff Morgan](#) ..... 763-576-4236

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Emergency Medical Services certificate*

**Program Information**

The Anoka Technical College Practical Nursing (PN) diploma is a 38-credit, full-time, two semester program. Through Minnesota Board of Nursing approved program of study, the Practical Nursing program prepares students for a diploma in Practical Nursing. Graduates are educationally eligible to take the National Council Licensure Exam for Practical Nurses (NCLEX-PN) and, after passing and obtaining state licensure, may use the title Licensed Practical Nurse.

**End-of-Program Student Learning Outcomes**

Consistent with the standards that define nursing practice, the outcomes of the Anoka Technical College program of learning is a graduate who is able to:

1. Adhere to professional standards of practice within safe, legal, ethical and regulatory frameworks within the practical nurse scope of practice (Professional concepts: Safety, Professional Identity and Behavior)
2. Communicate effectively to deliver coordinated, interprofessional care through teamwork and collaboration (Professional concepts: Teamwork and Collaboration)
3. Utilize holistic information to provide evidence-based patient care that contributes to continuously improving care processes (Professional concepts: Evidence-based Care, Quality Improvement)
4. Demonstrate a caring and empathic approach while providing for individual patients' needs across the lifespan and health/illness continuum within a diverse community (Professional concept: Patient Relationship-centered Care)
5. Participate in supporting patient care through the utilization of information technology (Professional concept: Informatics)

**Accreditation**

The Anoka Technical College Practical Nursing (PN) program is approved by the Minnesota Board of Nursing and is specifically designed to train graduates for the specialized field of Licensed Practical Nursing (LPN).

Effective July 12, 2017, the Anoka Technical College Practical Nursing Diploma Program is granted initial accreditation by the Accreditation Commission for Education in Nursing (ACEN) Board of Commissioners. The next scheduled evaluation visit is Fall, 2024.

Accreditation Commission for Education in Nursing (ACEN)  
3390 Peachtree Road NE, Suite 1400  
Atlanta, GA 30326  
(404) 975-5000  
[www.acenursing.org](http://www.acenursing.org)

**Admission Requirements**

All required documentation must be submitted in person; Enrollment Services will be unable to receive them via mail, online or fax. Practical Nursing applications are reviewed at the time they are submitted for completeness. When all admission guidelines are satisfied, the applicant is accepted on a space available basis for the following semester.

- Apply to Anoka Technical College and be admitted to the college
- Complete the Nursing Assistant or Medical Assistant requirement
- Complete the CPR requirement
- Complete the Accuplacer Assessments and the Test of Essential Academic Skills (TEAS V or ATI TEAS). See Admission Guidelines under the links on the Practical Nursing web page
- Complete the *Student Record of Immunization document* found under *Forms* on the Practical Nursing website
- Submit the Practical Nursing program *Application* (found under *Forms*) with documentation of each the above

**Background Study**

State law requires any person who provides services that involve direct contact with patients and/or residents at a health care facility have a background study conducted the Minnesota Department of Human Services (DHS). A student who is disqualified as a result of a background check will not be allowed to enter the program major. A student must receive a "Background Study Clearance" within 90 days preceding the start of clinical or fieldwork courses to be placed at a partnering facility. Any student failing to receive clearance will be disqualified from enrollment in the course. Arrests, charges, or convictions of criminal offenses may cause a student to fail a background study. A disqualified student has the right to request reconsideration of the disqualification. It is the responsibility of the student to request consideration to the Minnesota Department of Health Commissioner if he or she chooses to do so. An applicant is considered to be disqualified while in the reconsideration process.

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher. Refer to the Anoka Technical College *Student Handbook* and *College Policy 2.4*.

Additionally:

Complete all of the required courses as outlined on the program plan with a C or better grade in each course and an A in MATH 1010.

Maintain current CPR certification.

Complete NCLEX-Practical Nursing success predictor test.

Maintain an acceptable background check from the Minnesota Department of Human Services.

Submit an application for graduation to Records/Registration.

# Practical Nursing

Diploma

## Faculty Contact

[Christina Wilson](#), Practical Nursing Director ..... 763-576-4013

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College Transfer Student](#)

## Industry Information

Licensed practical nurses (LPNs) specialize in delivering skilled delegated nursing care to individual patients/client across the lifespan in all stages of wellness or illness at the direction of qualified healthcare providers. LPNs care for diverse adult and pediatric patients within an established plan of care and participate as a member of the healthcare team.

LPNs enjoy employment opportunities in a variety of health care settings, including clinics, long term care and transitional care centers, assisted living, home care, schools, hospitals, and group homes.

The LPN is a dynamic, vital member of the healthcare team and is legally responsible to practice practical nursing within the Minnesota Nurse Practice Act and the Minnesota Board of Nursing Rules.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester .....August  
Spring Semester .....January

## Program Sequence

**First Semester** ..... 18

- \*HLTH 1005 Anatomy & Physiology ..... 4
- \*MATH 1010 Dosage Calculations for Health Care Professionals ..... 1
- NURS 1400 Foundations of Nursing ..... 3
- NURS 1405 Nursing Interventions I: Lab..... 2
- NURS 1410 Health Promotion Across the Lifespan I ..... 4
- NURS 1420 Clinical Application I..... 2
- NURS 1430 Psychosocial Nursing ..... 1
- NURS 1440 Nursing Perspectives on Aging..... 1

**Second Semester** ..... 20

- \*\*ENGL 1107 Composition I ..... 4
- NURS 1500 Transition to Nursing Practice ..... 2
- NURS 1511 Health Promotion Across the Lifespan II ..... 4
- NURS 1515 Nursing Interventions II: Lab ..... 2
- NURS 1521 Clinical Application II ..... 6
- NURS 1541 Maternal-Child Nursing ..... 2

\* Must be taken during first semester or prior to acceptance into the PN major

\*\*May be taken first or second semester or before acceptance into PN major



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**Program Information**

The Anoka Technical College Surgical Technology Associate of Applied Science (AAS) degree is a 60-credit program designed to develop skills in all phases of operating room procedures and techniques, including clinical experience in the operating room.

In addition to operating room techniques, surgical procedures, surgical instruments and equipment, students study surgical microbiology, surgical pharmacology, medical terminology, anatomy and physiology, asepsis (sterile technique), preparation of the patient for surgery, and the physical conditions that make it necessary for a person to have surgery.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

- Accept constructive criticism and demonstrate the appropriate behavior change.
- Communicate effectively in medical language.
- Ability to transfer theoretical knowledge to clinical situations.
- Adjust to changes in technology.
- Understand his/her role and function as a member of the surgical team.
- Display professional behavior.
- Demonstrate the principles of aseptic technique consistently.
- Adhere to program/hospital policies and procedures according to industry standards.

**Accreditation/Certification**

The Anoka Technical College Surgical Technology program is nationally accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Graduates will take the National Certification Examination for Surgical Technologists: CAAHEP, 9355 135th St N, #7709, Seminole, FL 33775; 727-210-2350; www.caahep.org.

**Admission Requirements**

Evidence of immunization or a positive Rubella Titer. Students are strongly encouraged to take the Hepatitis B vaccine.

Steps for the application process for Surgical Technology AAS:

1. Successful completion of the Sterile Processing certificate
2. Accuplacer tests: Reading Comprehension within last 3 years and Arithmetic with last 2 years or appropriate test score OR Associates or Bachelors degree from an accredited U.S. institution of higher learning.
3. TEAS for Allied Health programs with a minimum score of 60%

Second year courses are restricted to students admitted to the Surgical Technology program. A medical exam is REQUIRED.

**Course Prerequisites**

A background in general math, anatomy/physiology, biology, health and life sciences, medical terminology and nursing assistant skills can be helpful.

**Clinical**

Clinical hospitals are located in the Twin Cities metropolitan area. Students must provide their own transportation to and from these assigned clinical sites and pay for any parking fees.

**Background Study**

Minnesota law requires any person with direct patient and resident contact at a health care facility licensed by the Minnesota Department of Health (MDH) to have a background study conducted by the state. An individual disqualified from direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in Minnesota licensed health care facility. The student is then responsible for requesting the commissioner to reconsider the disqualification.

**Graduation Requirements**

1. Successful completion of the Sterile Processing certification with a grade of B or higher in all required Biology courses and a grade of C or higher in the remaining required courses.
2. Successful completion of the second year Surgical Technology courses with a grade of C or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Industry Information**

Surgical technologists function mainly as a scrub person in a hospital operating room. The technologist sets up the instruments, drapes, sutures, and supplies for surgical procedures, assists the surgeon and other operating team members with gowning and gloving for surgery, and hands instruments, sutures and supplies to the surgeon throughout the operative procedure.

Surgical technologists work closely with surgeons and registered nurses, are able to anticipate the needs of the physician during surgery, and assist in the care of the patient during surgical procedures.

**Wages/Outlook/Advancement Opportunities**

Surgical Technology program graduates are qualified to work in hospital operating rooms, day surgery units, OB labor and delivery, cardiovascular labs, and research labs. Overtime and call time will vary with position and place of employment.

# Surgical Technology

Associate of Applied Science (AAS) Degree

With additional training, some technologists advance to first assistants, who help retract, sponge, and suture during surgery. They also help close and treat wounds.

Some technologists manage supply departments in hospitals. Others take jobs with insurance companies, supply services, or medical equipment companies.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
Spring Semester.....January

### General Education/MnTC Requirements: 19 Credits

Nineteen (19) general education credits of Minnesota Transfer Curriculum (MnTC) are required. **This requirement is met upon completion of the Sterile Processing certificate.**

### Program Sequence

- Completion of the Sterile Processing Technical Credits ..... 19
- Third Semester ..... 12**
- \*SURG 1010 Surgical Pharmacology ..... 2
- \*SURG 1026 Operating Room Theory ..... 2
- \*SURG 1027 Operating Room Techniques ..... 4
- \*SURG 1035 Operating Room Procedures I ..... 4
- Fourth Semester ..... 20**
- \*\*SURG 1037 Operating Room Procedures II ..... 4
- \*\*SURG 2000 Operating Room Clinical ..... 16

\* These courses must be completed prior to enrolling in SURG 2000.  
\*\*SURG 1037 and SURG 2000 must be taken concurrently

### Faculty Contact

[Rita Schutz](#).....763-576-4123

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Sterile Processing certificate*

### Program Information

The Anoka Technical College Sterile Processing certificate is a 28-credit program that prepares graduates to work in medical facilities that prepare surgical instruments, supplies and equipment necessary for healthcare. This program includes a broad introduction to health sciences, as well as medical language, communication and computers. The program curriculum includes decontamination, preparation, packaging, sterilization, and sterile storage.

The Sterile Processing certificate is a prerequisite to the Surgical Technology Associate of Applied Science (AAS) degree. Please see Surgical Technology AAS for more information.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.  
 Prepared for entry-level employment in a sterile processing position.  
 Eligible to take the certification examination following 400 hours of professional employment.  
 Eligible to apply to the AAS Surgical Technology program

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

- BIOL 1106 Principles of Biology requires a completion of READ 0900 or READ 0960 or appropriate test score.

### Graduation Requirements

Successful completion of the Sterile Processing certification with a grade of "B" or higher in all required Biology courses and a grade of "C" or higher in the remaining required courses.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The work environment is dynamic and fast-paced. The work is challenging, highly technical, and complex. The performance of this vital department has a major impact on the smooth operation of the many departments to which it provides products and services. Employment opportunities may be within hospitals, outpatient centers, and instrument processing centers.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
 Spring Semester .....January

### Program Sequence

<b>First Semester</b> .....	<b>6</b>
<input type="checkbox"/> BIOL 1106 Principles of Biology .....	4
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication.....	2
<b>Second Semester</b> .....	<b>10</b>
<input type="checkbox"/> BIOL 2100 Anatomy & Physiology I.....	4
<input type="checkbox"/> HLTH 1040 Medical Terminology.....	2
<input type="checkbox"/> PSYC 1406 General Psychology .....	4
<b>OR</b>	
<input type="checkbox"/> PSYC 1506 Lifespan Development .....	4
<b>OR</b>	
<input type="checkbox"/> PSYC 1606 Abnormal Psychology .....	4
<b>Third Semester</b> .....	<b>12</b>
<input type="checkbox"/> BIOL 2200 Anatomy & Physiology II.....	4
<input type="checkbox"/> SPCH 1200 Interpersonal Communication .....	3
<b>OR</b>	
<input type="checkbox"/> SPCH 1120 Public Speaking .....	3
<b>OR</b>	
<input type="checkbox"/> SPCH 1500 Intercultural Communication.....	3
<input type="checkbox"/> SURG 1003 Sterile Processing.....	3
<input type="checkbox"/> SURG 1005 Surgical Microbiology .....	2

### Faculty Contact

[Rita Schutz](#).....763-576-4123

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Surgical Technology AAS*





# **Information Technology Management**

# Business Data Analyst

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 45  
 General Education/MnTC ..... 15  
 Total Credits ..... 60

## Program Information

The Data Analyst graduate will receive the knowledge and skills necessary for employment and growth in entry-level business intelligence and data analyst professions. They will assist in the process of inspecting, cleansing, testing, and transforming data. Graduates will help interpret and visualize the data using various software tools and techniques to provide support in all decision making phases. Graduates will gain a solid understanding of information technology and applications used to support decision making. The Data Analyst graduate will have the opportunity to interact and work with various functional managers in all parts of the company.

## Program Learning Outcomes

1. Graduates will have knowledge and understanding of data analysis tools used in organizations
2. Graduates will have ability to prepare data and visualizations to help management in making decisions.
3. Graduates will have knowledge and understanding of relational database, data retrieval, data quality and data preparation methods.
4. Graduates will work various departments within an organization to validate, review and correct data discrepancies
5. Graduates will use computer software programs and applications for inputting, verifying, organizing, storing, retrieving, transforming (changing, updating, and deleting), and extracting information.
6. Graduates will develop data visualizations and ad-hoc reports through collaboration with leadership to identify and define metric that drive performance.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.
- **ENGL 2105** prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.
- **MATH 1550** prerequisite MATH 0900, or 0950 or 1080 or 1400 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Businesses are investing big-time in data analysis. Spending on big data and analytics will increase from \$10 billion in 2012 to more than \$32 billion in 2017, according to International Data Corporation. In context, that's about six times the growth rate of the overall information and communication technology market. Source: Minnesota Business Magazine.

- Data Scientist 80-20 rule- 80% of the time is data mining, and setting up the data to be analyzed, and 20% of the time is doing the analytical forecasting.
- Creates an entry to the workforce; Middle Skill Big Data Workers (MSBDW)
- Closest occupational field is Data Analyst, which is expected to grow 20-28 percent. As markets become more competitive, firms will need to use resources more efficiently. (U.S. Department of Labor, 2012)
- Job title examples: Data Analyst, Business Data Analyst, Information Specialist, Business Intelligence Analyst, Operations Data Analyst, Marketing Research Analyst, Information Clerk

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August, October  
 Spring Semester ..... January, March

## General Education/MnTC Requirements: 15 Credits

Fifteen (15) general education credits of [Minnesota Transfer Curriculum \(MnTC\)](#) are required from three different goal areas. Student is required to take one transferable course from MnTC Goal Area 4 and the following courses:

- ENGL 2105 Business and Technical Writing..... 4
- MATH 1550 Introduction to Statistics ..... 4
- PHIL 1200 Technology, Ethics and Society ..... 3
- General Education/MnTC ..... 4

**Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.**

## Program Sequence

<b>First Semester</b>	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3
<b>Second Semester</b>	<b>14</b>
<input type="checkbox"/> BDAT 1000 Business Concepts.....	2
<input type="checkbox"/> ITEC 2120 DB Design & SQL.....	4
<input type="checkbox"/> ITEC 2700 Artificial Intelligence.....	4
<input type="checkbox"/> MATH 1550 Introduction to Statistics.....	4



# Business Data Analyst

Associate of Applied Science (AAS) Degree

<b>Third Semester .....</b>	<b>18</b>
<input type="checkbox"/> BDAT 1025 Data Preparation for Analytics.....	3
<input type="checkbox"/> BDAT 1030 Data Analysis.....	4
<input type="checkbox"/> ITEC 1025 Project Management.....	4
<input type="checkbox"/> PHIL 1200 Technology, Society, and Ethics.....	3
<input type="checkbox"/> <a href="#">MnTC</a> General Education Elective .....	4
<b>Fourth Semester .....</b>	<b>13</b>
<input type="checkbox"/> BDAT 1010 Integrated Business Software .....	3
<input type="checkbox"/> BDAT 2140 Business Intelligence .....	3
<input type="checkbox"/> BDAT 2145 Special Topics in Analytics.....	3
<input type="checkbox"/> ENGL 2105 Business and Technical Writing .....	4

### Faculty Contact

[Vicki Baumgartner](#)..... 763-576-4146

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*

### Program Information

The Data Analyst graduate will receive the knowledge and skills necessary for employment and growth in entry-level business intelligence and data analyst professions. They will assist in the process of inspecting, cleansing, testing, and transforming data. Graduates will help interpret and visualize the data using various software tools and techniques to provide support in all decision making phases. Graduates will gain a solid understanding of information technology and applications used to support decision making. The Data Analyst graduate will have the opportunity to interact and work with various functional managers in all parts of the company.

### Program Learning Outcomes

1. Graduates will have knowledge and understanding of data analysis tools used in organizations
2. Graduates will have ability to prepare data and visualizations to help management in making decisions.
3. Graduates will have knowledge and understanding of relational database, data retrieval, data quality and data preparation methods.
4. Graduates will work various departments within an organization to validate, review and correct data discrepancies
5. Graduates will use computer software programs and applications for inputting, verifying, organizing, storing, retrieving, transforming (changing, updating, and deleting), and extracting information.
6. Graduates will develop data visualizations and ad-hoc reports through collaboration with leadership to identify and define metrics that drive performance.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Businesses are investing big-time in data analysis. Spending on big data and analytics will increase from \$10 billion in 2012 to more than \$32 billion in 2017, according to International Data Corporation. In context, that’s about six times the growth rate of the overall information and communication technology market. Source: Minnesota Busi-

ness Magazine.

- Data Scientist 80-20 rule- 80% of the time is data mining, and setting up the data to be analyzed, and 20% of the time is doing the analytical forecasting.
- Creates an entry to the workforce; Middle Skill Big Data Workers (MSBDW)
- Closest occupational field is Data Analyst, which is expected to grow 20-28 percent. As markets become more competitive, firms will need to use resources more efficiently. (U.S. Department of Labor, 2012)
- Job title examples: Data Analyst, Business Data Analyst, Information Specialist, Business Intelligence Analyst, Operations Data Analyst, Marketing Research Analyst, Information Clerk

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester..... August, October  
Spring Semester ..... January, March

### Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3
<b>Second Semester</b> .....	<b>10</b>
<input type="checkbox"/> BDAT 1000 Business Concepts.....	2
<input type="checkbox"/> ITEC 2120 DB Design & SQL.....	4
<input type="checkbox"/> ITEC 2700 Artificial Intelligence.....	4
<b>Third Semester</b> .....	<b>11</b>
<input type="checkbox"/> BDAT 1025 Data Preparation for Analytics.....	3
<input type="checkbox"/> BDAT 1030 Data Analysis.....	4
<input type="checkbox"/> ITEC 1025 Project Management.....	4
<b>Fourth Semester</b> .....	<b>9</b>
<input type="checkbox"/> BDAT 1010 Integrated Business Software.....	3
<input type="checkbox"/> BDAT 2140 Business Intelligence.....	3
<input type="checkbox"/> BDAT 2145 Special Topics in Analytics.....	3

### Faculty Contact

[Vicki Baumgartner](#)..... 763-576-4146

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)  
*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*



# Network Management & Security

## Emphasis

Associate of Applied Science (AAS) Degree

Technical Requirements .....	57
General Education/MnTC .....	15
Total Credits .....	72

### Program Information

The Anoka Technical College Associate in Applied Science (AAS) degree in Information Technology with a concentration in Network Management and Security emphasis is a 72-credit program designed to prepare graduates to successfully compete for high-paying, rewarding careers in the high demand IT fields both today and in the future.

This unique program allows technical specialization in Network Management and Security while the common core courses and required electives from other options build a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace.

The Network Management and Security emphasis focuses on the theory and practice of designing, deploying, and managing network technologies, network convergence, and network security.

The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers.

The IT degree has an initial curriculum in career areas of concentration:

- Network Management and Security
- Software Development
- Web Design & Development

Graduates will be encouraged to take advantage of access to corporate recruitment and IT recruiting firms. Internships and work-study positions will also be available. The IT graduate will be highly employable. The AAS degree includes General Education credits, which broaden knowledge beyond what is required in the technical field and places the student on track for future managerial positions.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.
7. Apply logical reasoning to a problem.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.
- **ENGL 2105** prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.
- **Goal Area 4** could require extra math courses or appropriate scores

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March

### General Education/MnTC Requirements: 15 Credits

Fifteen (15) general education credits of [Minnesota Transfer Curriculum \(MnTC\)](#) are required from three different goal areas. Student is required to take one transferable course from MnTC Goal Area 4 and the following courses:

- ENGL 2105 Business and Technical Writing..... 4
- PHIL 1200 Technology, Ethics and Society..... 3
- General Education/MnTC ..... 8

**Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.**



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[AnokaTech.edu](http://AnokaTech.edu)

# Network Management & Security

Emphasis

Associate of Applied Science (AAS) Degree

## Program Sequence

<b>First Semester</b>	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

<input type="checkbox"/> ITEC 1025 Project Management.....	4
<input type="checkbox"/> ITEC 2207 Windows Server Administration.....	4
<input type="checkbox"/> ITEC 2215 Linux/Web Server Administration.....	4
<input type="checkbox"/> ITEC 2407 Internetworking Device I.....	4
<input type="checkbox"/> ITEC 2408 Internetworking Device II.....	4
<input type="checkbox"/> ITEC 2411 Network Scripting.....	2
<input type="checkbox"/> ITEC 2415 Virtualization Technologies.....	4
<input type="checkbox"/> ITEC 2430 Firewall Security.....	4
<input type="checkbox"/> ITEC 2440 IDS/IPS and Auditing.....	4
<input type="checkbox"/> ITEC 2450 Ethical Hacking.....	4
<input type="checkbox"/> ITEC 2901 Integrated Capstone Project.....	4

## Faculty Contact

[Tracy Hoffman](#) ..... 763-576-4198

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or

[EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*

## Program Information

The Anoka Technical College Network Management and Security diploma is a 57-credit program designed to prepare graduates to successfully compete for high-paying, rewarding careers in the high demand IT fields both today and in the future.

This unique program allows technical specialization in Network Management and Security while the common core courses and required electives from other options build a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace.

The Network Management and Security diploma focuses on the theory and practice of designing, deploying, and managing network technologies, network convergence, and network security. The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers.

Graduates will be encouraged to take advantage of access to corporate recruitment and IT recruiting firms. Internships and work-study positions will also be available. The IT graduate will be highly employable.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March

## Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

<input type="checkbox"/> ITEC 1025 Project Management .....	4
<input type="checkbox"/> ITEC 2207 Windows Server Administration.....	4
<input type="checkbox"/> ITEC 2215 Linux/Web Server Administration.....	4
<input type="checkbox"/> ITEC 2407 Internetworking Device I.....	4
<input type="checkbox"/> ITEC 2408 Internetworking Device II.....	4
<input type="checkbox"/> ITEC 2411 Network Scripting.....	2
<input type="checkbox"/> ITEC 2415 Virtualization Technologies .....	4
<input type="checkbox"/> ITEC 2430 Firewall Security .....	4
<input type="checkbox"/> ITEC 2440 IDS/IPS and Auditing .....	4
<input type="checkbox"/> ITEC 2450 Ethical Hacking .....	4
<input type="checkbox"/> ITEC 2901 Integrated Capstone Project.....	4

## Faculty Contact

[Tracy Hoffman](#) ..... 763-576-4198

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*



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# Software Development

Emphasis

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 57

General Education/MnTC ..... 15

Total Credits ..... 72

## Program Information

The Anoka Technical College Associate in Applied Science (AAS) degree in Information Technology with an emphasis in Software Development is a 72-credit program designed to prepare graduates to successfully compete for high-paying, rewarding careers in IT fields with the highest demand, both today and in the future.

The Software Development Associate of Applied Science (AAS) degree emphasis provides students with the knowledge to become part of a software application team that builds applications to solve industry needs. Students develop both the front-end graphical user interface (GUI) as well as the software code and back-end database for business applications. Students are given the opportunity to collaborate in a team environment for development and practice documenting and critiquing code. Collaboration and communication are emphasized as a part of the software development coursework.

The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers.

The IT degree has an initial curriculum in career areas of concentration:

- Network Management and Security
- Software Development
- Web Design and Development

This unique program allows technical specialization in Software Development while the common core courses and required electives from other specializations build the broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace. The Software Development Associate of Applied Science (AAS) degree includes general education credits, which broaden knowledge beyond what is required in the technical field and places the student on track for future managerial positions.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.
7. Apply logical reasoning to a problem.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.
- **ENGL 2105** prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.
- **Goal Area 4** could require extra math courses or appropriate scores

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March

## General Education/MnTC Requirements: 15 Credits

Fifteen (15) general education credits of [Minnesota Transfer Curriculum \(MnTC\)](#) are required from three different goal areas. Student is required to take one transferable course from MnTC Goal Area 4 and the following courses:

- ENGL 2105 Business and Technical Writing..... 4
- PHIL 1200 Technology, Ethics and Society ..... 3
- General Education/MnTC ..... 8

**Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.**

# Software Development

Emphasis

Associate of Applied Science (AAS) Degree

## Program Sequence

**First Semester ..... 15**

- BDAT 1005 Data Analysis Fundamentals..... 2
- ITEC 1003 Networking Fundamentals..... 2
- ITEC 1011 Programming Logic & Design..... 4
- ITEC 1016 Web Programming Technologies..... 4
- TLIT 1005 Technology Fundamentals..... 3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

- ITEC 1025 Project Management ..... 4
- ITEC 1035 Documentation Standards..... 2
- ITEC 2105 JAVA Programming ..... 4
- ITEC 2120 DB Design & SQL..... 4
- ITEC 2311 User Interface Experience..... 4
- ITEC 2340 Scripting languages ..... 4
- ITEC 2520 Mobile Application Development ..... 4
- ITEC 2600 Application Development ..... 4
- ITEC 2601 Database Application Development ..... 4
- ITEC 2700 Artificial Intelligence..... 4
- ITEC 2901 Integrated Capstone Project..... 4

## Faculty Contact

[Gerard Kne](#)..... 763-576-4044

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*

## Program Information

The Anoka Technical College Software Development diploma is a 57-credit program is designed to prepare graduates to successfully compete for high-paying, rewarding careers in the high-demand field of IT software development.

The Software Development diploma provides students with the knowledge to become part of a software application team that builds applications to solve industry needs. Students develop both the front-end graphical user interface (GUI) as well as the software code and back-end database for business applications. Students are given the opportunity to collaborate in a team environment for development and practice documenting and critiquing code. Collaboration and communication are emphasized as a part of the software development coursework.

The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers.

This unique diploma program allows technical specialization in Software Development while the common core courses and required electives from other specializations build the broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August, October  
Spring Semester ..... January, March

## Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

<input type="checkbox"/> ITEC 1025 Project Management .....	4
<input type="checkbox"/> ITEC 1035 Documentation Standards.....	2
<input type="checkbox"/> ITEC 2105 JAVA Programming .....	4
<input type="checkbox"/> ITEC 2120 DB Design & SQL.....	4
<input type="checkbox"/> ITEC 2311 User Interface Experience.....	4
<input type="checkbox"/> ITEC 2340 Scripting languages .....	4
<input type="checkbox"/> ITEC 2520 Mobile Application Development .....	4
<input type="checkbox"/> ITEC 2600 Application Development.....	4
<input type="checkbox"/> ITEC 2601 Database Application Development .....	4
<input type="checkbox"/> ITEC 2700 Artificial Intelligence .....	4
<input type="checkbox"/> ITEC 2901 Integrated Capstone Project.....	4

## Faculty Contact

[Gerard Kne](#)..... 763-576-4044

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*



# Web Design & Development

Emphasis

Associate of Applied Science (AAS) Degree

Technical Requirements ..... 57

General Education/MnTC ..... 15

Total Credits ..... 72

## Program Information

The Anoka Technical College Associate in Applied Science (AAS) degree in Information Technology with an emphasis in Web Design and Development is a 72-credit program designed to prepare graduates to successfully compete for high-paying, rewarding careers in the high demand IT fields both today and in the future.

This unique program allows technical specialization in Web Design and Development while the common core courses and required electives from other options build a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace. Anoka Technical College Web Design and Development emphasis graduate will be a specialist in one of the areas of emphasis in Information Technology and will also have a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace.

Web Developers are responsible for front and back-end web development. On the front-end, the web developer uses a combination of HTML, CSS, and scripting languages to build everything a user sees and interacts with on a website. On the back-end, they develop the application and interact with the server and database that make up the foundational structure of an interactive website using various web technologies. The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers.

The IT degree has an initial curriculum in career areas of concentration:

- Network Management and Security
- Software Development
- Web Design & Development

Graduates will be encouraged to take advantage of access to corporate recruitment and IT recruiting firms. Internships and work-study positions will also be available. The IT graduate will be highly employable. The Associate of Applied Science (AAS) degree includes General Education credits, which broaden knowledge beyond what is required in the technical field and places the student on track for future managerial positions.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.

6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.
7. Apply logical reasoning to a problem.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.
- **ENGL 2105** prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score.
- **Goal Area 4** could require extra math courses or appropriate scores

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer:](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## General Education/MnTC Requirements: 15 Credits

Fifteen (15) general education credits of [Minnesota Transfer Curriculum \(MnTC\)](#) are required. Student is required to take one transferable course from MnTC Goal Area 4 and the following courses:

- ENGL 2105 Business and Technical Writing..... 4
- PHIL 1200 Technology, Ethics and Society ..... 3
- General Education/MnTC ..... 8

## Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March



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# Web Design & Development

Emphasis

Associate of Applied Science (AAS) Degree

## Program Sequence

<b>First Semester</b>	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals	3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

<input type="checkbox"/> ITEC 1025 Project Management	4
<input type="checkbox"/> ITEC 1035 Documentation Standards	2
<input type="checkbox"/> ITEC 2120 Database Design & SQL	4
<input type="checkbox"/> ITEC 2215 Linux/Web Server Administration	4
<input type="checkbox"/> ITEC 2311 User Interface Experience	4
<input type="checkbox"/> ITEC 2317 Web Interactivity Tools	4
<input type="checkbox"/> ITEC 2340 Scripting languages	4
<input type="checkbox"/> ITEC 2520 Mobile Application Development	4
<input type="checkbox"/> ITEC 2600 Application Development	4
<input type="checkbox"/> ITEC 2601 Database Application Development	4
<input type="checkbox"/> ITEC 2901 Integrated Capstone Project	4

## Faculty Contact

[Lisa Hubbard](#)..... 763-576-4085  
[Julie Myers](#)..... 763-576-4072

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*

## Program Information

The Anoka Technical College Web Design and Development diploma is a 57-credit program designed to prepare graduates to successfully compete for high-paying, rewarding careers in the high demand IT fields both today and in the future. This unique program allows technical specialization in Web Design and Development while the common core courses and required electives from other options build a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace.

The Anoka Technical College Web Design and Development graduate will be a specialist in one of the areas of emphasis in Information Technology and will also have a broad IT foundation needed to understand the terminology and methodologies of other IT specialties in the workplace. Web Developers are responsible for front and back-end web development. On the front-end, the web developer uses a combination of HTML, CSS, and scripting languages to build everything a user sees and interacts with on a website. On the back-end, they develop the application and interact with the server and database that make up the foundational structure of an interactive website using various web technologies.

The program requirements were determined through consultation with employers, those working in the industry, technical training professionals, and those currently seeking training and retraining for IT careers. Graduates will be encouraged to take advantage of access to corporate recruitment and IT recruiting firms. Internships and work-study positions will also be available. The IT graduate will be highly employable.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **BDAT 1005, ITEC 1003, ITEC 1011, ITEC 1016, and TLIT 1005** are first semester courses and prerequisite to other courses in this major.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](http://www.dhs.gov/minnesota-department-of-employment-and-economic-development).

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Anoka Technical College Information Technology graduates will be specialists in their area of emphasis and will also have a broad base of foundational knowledge from the common core courses that span the three emphasis areas. Professional standards, proper methodology and project management will be emphasized throughout the courses.

## Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March

## Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals.....	3

**After completing the 15 credit core curriculum, IT students work with a faculty advisor to plan their course sequence.**

<input type="checkbox"/> ITEC 1025 Project Management .....	4
<input type="checkbox"/> ITEC 1035 Documentation Standards.....	2
<input type="checkbox"/> ITEC 2120 Database Design & SQL.....	4
<input type="checkbox"/> ITEC 2215 Linux/Web Server Administration.....	4
<input type="checkbox"/> ITEC 2311 User Interface Experience.....	4
<input type="checkbox"/> ITEC 2317 Web Interactivity Tools.....	4
<input type="checkbox"/> ITEC 2340 Scripting languages .....	4
<input type="checkbox"/> ITEC 2520 Mobile Application Development.....	4
<input type="checkbox"/> ITEC 2600 Application Development .....	4
<input type="checkbox"/> ITEC 2601 Database Application Development .....	4
<input type="checkbox"/> ITEC 2901 Integrated Capstone Project.....	4

## Faculty Contact

[Lisa Hubbard](#)..... 763-576-4085  
[Julie Myers](#)..... 763-576-4072

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*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, Web Design & Development, and IT Support certificate*



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### Program Information

The Anoka Technical College Information Technology (IT) Support certificate program is 15-credits of coursework and it is designed to prepare graduates to successfully compete for entry-level positions in the IT field.

The program provides students with the basis to become an IT support professional in a help desk environment. This is an entry-level position, which involves technical support of end users. IT support professionals provide assistance to other employees within or outside of the organization with common IT problems and questions. IT Support professionals work with the ticketing system in the organization to ensure issues are escalated appropriately and resolved. The curriculum combines theoretical design instruction with hands-on implementation practice professionals.

The IT Support certificate Program builds the broad IT foundation needed to understand the terminology and methodologies of IT specialties in the workplace.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Apply critical thinking skills in the identification, analysis and resolution of information technology problems.
2. Exhibit interpersonal skills and a professional attitude while working in an information technology environment.
3. Clearly express ideas and information in written and spoken form.
4. Analyze, design and document system specifications to meet client needs.
5. Apply project management techniques to solve business problems.
6. Collaborate with a team to design and develop customer software-based solutions and integrate them into the user environment.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The graduate will have a broad base of foundations knowledge from the common core courses that span areas of IT.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August, October  
Spring Semester..... January, March

### Program Sequence

<b>First Semester</b> .....	<b>15</b>
<input type="checkbox"/> BDAT 1005 Data Analysis Fundamentals.....	2
<input type="checkbox"/> ITEC 1003 Networking Fundamentals.....	2
<input type="checkbox"/> ITEC 1011 Programming Logic & Design.....	4
<input type="checkbox"/> ITEC 1016 Web Programming Technologies.....	4
<input type="checkbox"/> TLIT 1005 Technology Fundamentals .....	3

### Faculty Contact

[Lisa Hubbard](#) ..... 763-576-4085

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see AAS degrees and/or diplomas in: Business Data Analyst, Network Management and Security, Software Development, and Web Design & Development*



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**Legal, Administration  
& Management**

# Administrative Office Specialist

Associate of Applied Science (AAS) Degree

Technical Requirements..... 45

General Education/MnTC ..... 15

Total Credits ..... 60

## Program Information

The Anoka Technical College Administrative Office Specialist Associate of Applied Science (AAS) degree is a 60-credit program that prepares students with the broad range of technical and communications skills needed for success in today’s office work environment. Students will gain competence in word processing, spreadsheet, database, and presentation software. Keyboarding speed and accuracy is developed while grammar, punctuation and writing skills are polished. Students study bookkeeping theory and learn general ledger software in order to prepare them for general bookkeeping or accounts receivable or accounts payable positions. Students are well prepared to fulfill any office support position and may advance to office management.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Exhibit effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Demonstrate the ability to perform mathematical calculations necessary in business applications including accounting, by working with percentages; decimals and fractions; understanding accounting principles as they are applied to business office bookkeeping; and using formulas for creating spreadsheets and databases.
9. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.
10. The Administrative Office Specialist AAS degree includes all technical courses along with 15 Minnesota Transfer Curriculum general education credits to help provide a well-rounded education. The completion of a degree shows commitment and dedication and can be advantageous for students seeking jobs beyond entry level or with employers who require a degree.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

- **ADSC 1003 Introduction to Keyboarding and Speedbuilding** is a prerequisite for ADSC 1010 Keyboarding I.
- **ADSC 1031 Business English Skills** prerequisites READ 0900 or READ 0960 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Administrative office specialist perform a full range of office tasks. They use a variety of software packages (word processing, spreadsheets, databases, graphics, desktop publishing, multi-media, etc.) to create, record, edit, and store correspondence, reports, tables and forms from many sources.

They may also read and route incoming mail, file and retrieve correspondence and other records manually or electronically, transcribe business correspondence from machine dictation, answer telephones and give information to callers or route calls to the appropriate individual, operate copying and faxing equipment, perform bookkeeping duties, transactions and make travel arrangements.

In some offices, administrative office specialists may be responsible for one or two of these areas. In a small office, they may be responsible for all of them.

## Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

## Start Dates

Fall Semester ..... August  
Spring Semester ..... January

## General Education/ MnTC Requirement: 12

Twelve (12) general education credits of Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from THREE different goal areas.

- [MnTC General Education Elective](#) ..... 12

# Administrative Office Specialist

Associate of Applied Science (AAS) Degree

## Technical Credits: 45 Credits

### First Semester ..... 14

- ADSC 1003 Introduction to Keyboarding & Speedbuilding ... 2
- ADSC 1031 Business English Skills..... 3
- COMP 1002 Computer Technologies for Communication..... 2
- INTS 1000 Critical Thinking Application for College..... 3
- MnTC General Education Elective ..... 4

### Second Semester..... 16

- ADSC 1010 Keyboarding I ..... 3
- ADSC 1162 Microsoft PowerPoint ..... 2
- ADSC 1197 Microsoft Word..... 4
- ADSC 1206 Written Business Communications..... 4
- Program Elective ..... 3

### Third Semester ..... 15

- ADSC 1045 Administrative Office Procedures ..... 4
- ADSC 1171 Microsoft Excel ..... 2
- ADSC 1181 Microsoft Access ..... 2
- MnTC General Education Elective ..... 4
- Program Elective ..... 3

### Fourth Semester ..... 15

- ADSC 1054 Office Bookkeeping ..... 4
- ADSC 1142 Integrated Software Applications ..... 4
- MnTC General Education Elective ..... 4
- Program Elective ..... 3

### Program Electives ..... 9

Choose any nine (9) elective credits from the following list of courses:

- Any SMGT courses
- ADSC 1451 Technology Tools for the Workplace ..... 3
- ADSC 1006 Business Law ..... 4
- ADSC 1064 Government, Courts, & Criminal Law ..... 3
- ADSC 1075 Corporate Law Collections and Bankruptcy..... 3
- ADSC 1085 Probate and Real Estate Law ..... 4
- ADSC 1095 Family Law and Civil Litigation ..... 4
- ADSC 1100 Legal Research, Citations, & Office Procedures . 4
- ADSC 1111 Legal Transcription..... 2

## Faculty Contact

- [Darla Cullen](#).....763-576-4018
- [Deb Catlett](#).....763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

Also see: *Administrative Office Specialist diploma, Office Software Specialist certificate, and Office Communications Specialist certificate*

### Program Information

The Anoka Technical College Administrative Office Specialist diploma is a 39-credit program that prepares students with the broad range of technical and communications skills needed for success in today’s office work environment. Students will gain competence in word processing, spreadsheet, database, and presentation software. Keyboarding speed and accuracy is developed while grammar, punctuation and writing skills are polished. Students study bookkeeping theory and learn general ledger software in order to prepare them for general bookkeeping or accounts receivable or accounts payable positions. Students are well prepared to fulfill any office support position and may advance to office management.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

1. Exhibit effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Demonstrate the ability to perform mathematical calculations necessary in business applications including accounting, by working with percentages; decimals and fractions; understanding accounting principles as they are applied to business office bookkeeping; and using formulas for creating spreadsheets and databases.
9. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.
10. The Administrative Office Specialist diploma continues from the certificates with additional technical coursework therefore preparing students with a wider range of job-specific skills.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

- **ADSC 1003 Introduction to Keyboarding and Speedbuilding** is a prerequisites for ADSC 1010 Keyboarding I.
- **ADSC 1031 Business English Skills** prerequisites READ 0900 or READ 0960 or appropriate test score.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

Administrative office specialists perform a full range of office tasks. They use a variety of software packages (word processing, spreadsheets, databases, graphics, desktop publishing, multi-media, etc.) to creates, record, edit, and store correspondence, reports, tables and forms from many sources.

They may also read and route incoming mail, file and retrieve correspondence and other records manually or electronically, transcribe business correspondence from machine dictation, answer telephones and give information to callers or route calls to the appropriate individual, operate copying and faxing equipment, perform bookkeeping duties, transactions and make travel arrangements.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
 Spring Semester .....January

### Program Sequence

<b>First Semester</b>	.....	<b>12</b>
<input type="checkbox"/> ADSC 1003	Introduction to Keyboarding & Speedbuilding ...	2
<input type="checkbox"/> ADSC 1031	Business English Skills .....	3
<input type="checkbox"/> ADSC 1162	Microsoft PowerPoint .....	2
<input type="checkbox"/> COMP 1002	Computer Technologies for Communication .....	2
<input type="checkbox"/> INTS 1000	Critical Thinking Application for College.....	3



# Administrative Office Specialist

Diploma

<b>Second Semester</b> .....	<b>15</b>
<input type="checkbox"/> ADSC 1010 Keyboarding I.....	3
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1181 Microsoft Access .....	2
<input type="checkbox"/> ADSC 1197 Microsoft Word .....	4
<input type="checkbox"/> ADSC 1206 Written Business Communications .....	4
<b>Third Semester</b> .....	<b>12</b>
<input type="checkbox"/> ADSC 1045 Administrative Office Procedures .....	4
<input type="checkbox"/> ADSC 1054 Office Bookkeeping.....	4
<input type="checkbox"/> ADSC 1142 Integrated Software Applications .....	4

### Faculty Contact

<a href="#">Darla Cullen</a> .....	763-576-4018
<a href="#">Deb Catlett</a> .....	763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Administrative Office Specialist AAS, Office Software Specialist certificate, and Office Communications Specialist certificate*

## Program Information

The Office Communications Specialist certificate program at Anoka Technical College provides students the opportunity to develop the grammar, punctuation, usage, and writing skills necessary to create, proofread, and edit polished business messages and oral presentations.

These skills can be used in any job that requires the office professional to proof, edit, or write proposals, newsletters, website content, blogs, press releases, social media posts, presentations, promotional materials, and various other types of publications based on industry specifics.

Students are prepared to work in this position through completion of courses in Business English and Written Business Communications which provide students with advanced instruction and practice in grammar, usage, punctuation and business writing concepts. Writing and editing is often done in a collaborative environment, which requires the ability to work as a positive member of a team. Administrative Office Procedures provides students the opportunity to learn and practice positive team behaviors and to polish their individual written and verbal communications skills.

## Program Learning Outcomes

The Office Communications Specialist graduate will achieve the following learning outcomes.

1. Exhibits effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

- **ADSC 1031 Business English Skills** prerequisites READ 0900 or READ 0960 or appropriate test score.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Spell and grammar check software does not replace a detail-oriented office professional who is knowledgeable in style guidelines and knows how to use technology resources to find current usage guidelines. An office support professional proficient in these skills is an irreplaceable asset to any manager/supervisor who depends on this specialist to project an intelligent, professional image of the individuals within a company and the company as a whole in all forms of communication.

## Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## Program Sequence

<b>First Semester</b> .....	<b>10</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding & Speedbuilding ...	2
<input type="checkbox"/> ADSC 1031 Business English.....	3
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication.....	2
<input type="checkbox"/> INTS 1000 Critical Thinking Application for College.....	3
<b>Second Semester</b> .....	<b>11</b>
<input type="checkbox"/> ADSC 1010 Keyboarding I.....	3
<input type="checkbox"/> ADSC 1045 Administrative Office Procedures.....	4
<input type="checkbox"/> ADSC 1206 Written Business Communications .....	4

## Faculty Contact

[Darla Cullen](#) .....763-576-4018  
[Deb Catlett](#).....763-576-4025

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Administrative Office Specialist AAS, Administrative Office Specialist Diploma, and Office Software Specialist certificate*



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## Program Information

The Office Software Specialist certificate program at Anoka Technical College prepares students to use advanced software skills to find employment in virtually any industry. Support professionals who can effectively use the features of Microsoft Word, Excel, PowerPoint, and Access-- and know how these software programs integrate to streamline and perform more efficient business applications-- are more productive and contribute to the organization and productivity of an office. Microsoft Office skills are one of the top three job requirements listed in recruitment ads for office support professionals (Microsoft Office Specialist Productivity Study, Certiport, 2012).

Upon graduation, students will be prepared for employment in this position through completion of advanced coursework in each of the Microsoft Office programs: Word, Excel, Access, and PowerPoint. Coursework in QuickBooks, the leading software used for bookkeeping applications in business, is included to prepare students for bookkeeping-related positions in accounts receivable, accounts payable, insurance or other accounting-related support positions.

## Program Learning Outcomes

The Office Software Specialist graduate will achieve the following learning outcomes.

1. Exhibits effective interpersonal skills and professional attitudes by demonstrating the ability to communicate with authority figures and peers; follow work rules and expectations appropriately; maintain confidentiality; and recognize an appropriate business appearance.
2. Demonstrate the ability to express thoughts clearly, concisely, and appropriately in verbal and written format by consistently using correct mechanics, grammar, format, and message approach (direct, indirect).
3. Demonstrate the use of critical thinking skills to analyze and solve business problems by demonstrating the ability to define problems, find relevant information, synthesize and evaluate information, and implement decisions.
4. Demonstrate proficiency in keyboarding speed and accuracy and knowledge of correct document formatting.
5. Demonstrate technical competency by utilizing a wide range of software applications necessary for business office operations; demonstrates initiative in learning to use new technology, and applies new technology accurately in office settings.
6. Demonstrate knowledge of roles and functions of various professionals; collaborate and problem-solve as part of the office team.
7. Demonstrate ability to set priorities, organize work, and sequence tasks appropriately, and consistently complete projects on a schedule.
8. Develop and evaluate customer service skills by ascertaining the characteristics of a customer service organization and using customer service skills in servicing customers professionally.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a "C" or better.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

In this information-intensive economy, support professionals with advanced software skills are highly sought after by employers in a wide variety of industries. Most job applicants have some familiarity with Microsoft Word; however, individuals who can carry out mail merges, format documents expertly, and execute other complex functions will stand out above the rest. Business is data-driven, and office professionals who possess the know-how to integrate Microsoft Outlook, Word, Excel, and Access to organize and manipulate information are in particularly high demand. Having the ability to create dynamic presentations for bosses and colleagues in PowerPoint is essential. QuickBooks is used in business for accounting, payroll, invoicing, reporting and more. If you're seeking a job in a bookkeeping administrative role, a working knowledge of QuickBooks is definitely an asset.

## Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester.....January

## Program Sequence

<b>First Semester</b> .....	<b>13</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding and Speedbuilding.	2
<input type="checkbox"/> ADSC 1054 Office Bookkeeping .....	4
<input type="checkbox"/> ADSC 1162 Microsoft PowerPoint.....	2
<input type="checkbox"/> COMP 1002 Computer Technologies for Communication.....	2
<input type="checkbox"/> INTS 1000 Critical Thinking Application for College.....	3
<b>Second Semester</b> .....	<b>12</b>
<input type="checkbox"/> ADSC 1142 Intergrated Software Applications .....	4
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1181 Microsoft Access .....	2
<input type="checkbox"/> ADSC 1197 Microsoft Word .....	4

## Faculty Contact

Darla Cullen.....763-576-4018  
Deb Catlett.....763-576-4025

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*Also see: Administrative Office Specialist AAS, Administrative Office Specialist Diploma, and Office Communications Specialist certificate*



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[AnokaTech.edu](http://AnokaTech.edu)

## Program Information

The Anoka Technical College Associate of Applied Science (AAS) degree in Judicial Reporting is a 68-credit program designed to get graduates working as soon as possible. The academics are designed to be completed in two years. The speed requirement may be completed in two years or may take additional time. Coursework includes English, Legal and Medical Terminology, Business Law, Computer Technology and Machine Shorthand Theory.

Students learn a conflict-free realtime theory that enables them to write efficiently on a realtime system starting in the first semester. Students learn theory in their first year of classes, then work to increase their speed and accuracy until they can capture literary material at 180 wpm, Jury Charge material at 200 wpm, and question-and-answer material at 225 wpm. Summer sessions are mandatory for Judicial Reporting students.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Students will demonstrate the ability to write a realtime theory.
- Students will be able to demonstrate competency in court reporting technology, including the use of customized computer-aided software.
- Students will be able to write two-voice at 225 wpm with 97% accuracy; jury charge at 200 wpm with 97% accuracy; and literary at 180 wpm with 97% accuracy.
- Students will demonstrate knowledge of business and professional ethics that are essential to success.
- Students will participate in an internship consisting of 40 hours of actual writing time with a professional reporter and/or captioner. Student will demonstrate entry-level industry proficiency by producing a 40-page manuscript.

## Course Prerequisites

\* The prerequisite for JRBC 1005 is ADSC 1003 Introduction to Keyboarding and Speedbuilding or successful Keyboarding test out at 25 wpm or more.

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

## Accreditation/Certification

The Judicial Reporting curriculum was created to meet or exceed National Court Reporters Association (NCRA) standards set out by the Council on Approved Student Education (CASE).

The Judicial Reporting/Broadcast Captioning/CART programs are approved by NCRA. Upon graduation, students will be ready to take the NCRA’s Registered Professional Reporter (RPR) certification exam. The RPR exam is offered twice per year in April and November.

## Program Essentials

Laptop, steno machine, Eclipse student software. Please see instructor for specific requirements before purchasing any equipment. See Tuition and Fees for more information.

## Graduation Requirements

Students must earn a grade of “B” or better in all speedbuilding classes and a grade of “C” or better in all other coursework in order to graduate. In addition, students shall pass three five-minute speed tests with 97% accuracy at the following speeds: 225 wpm testimony (two-voice), 200 wpm jury charge, and 180 wpm literary.

The student shall successfully complete an internship with no less than 40 hours of verified actual writing time.

Upon graduation, students will be ready to take the NCRA’s Registered Professional Reporter (RPR) certification exam. The RPR exam is offered twice per year, in April and November.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Judicial Reporters can work in courtrooms as official reporters, creating accurate verbatim written records of all the proceedings. Official reporters are employed by the State. Deposition reporting (also known as freelance reporting) is a popular field because it is interesting and allows for flexible scheduling. Freelance reporters typically work on an independent contractor basis taking depositions at law offices.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
 Spring Semester ..... January\*\*

Summer session is mandatory for Judicial Reporting students.

\*\**Students who start in the spring will need more time to complete this program. Limited first semester technical courses are offered in the Spring semester.*

## MnTC General Education

Fifteen (15) credits of general education credits from the [Minnesota Transfer Curriculum \(MnTC\)](#) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

*Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*



# Judicial Reporting

Associate of Applied Science (AAS) Degree

## Program Sequence

<b>Fall Semester</b> .....	<b>11</b>
<input type="checkbox"/> ADSC 1006 Business Law .....	4
<input type="checkbox"/> JRBC 1005 Realtime Reporting I* .....	4
<input type="checkbox"/> JRBC 1031 Foundations of Law .....	3
<b>Spring Semester</b> .....	<b>11</b>
<input type="checkbox"/> JRBC 1000 Realtime Reporting Orientation .....	1
<input type="checkbox"/> JRBC 1105 Realtime Reporting II* .....	4
<input type="checkbox"/> JRBC 1120 Realtime Reporting Technology .....	3
<input type="checkbox"/> JRBC 2011 Transcription & English I .....	3
<b>Summer Semester</b> .....	<b>7</b>
<i>Please see your advisor for summer schedule</i>	
<input type="checkbox"/> JRBC 1200 Realtime Reporting III* .....	4
<input type="checkbox"/> JRBC 2016 Transcription & English II .....	3
<b>Fall Semester</b> .....	<b>9</b>
<input type="checkbox"/> JRBC 2000 Realtime Reporting IV* .....	4
<input type="checkbox"/> JRBC 2030 Judicial Reporting Procedures .....	3
<input type="checkbox"/> JRBC 2040 Business Success for Realtime Careers .....	2
<b>Spring Semester</b> .....	<b>9</b>
<input type="checkbox"/> HLTH 1040 Medical Terminology .....	2
<input type="checkbox"/> JRBC 2036 Word Enrichment .....	3
<input type="checkbox"/> JRBC 2100 Realtime Reporting V* .....	4
<b>Summer Semester</b> .....	<b>6</b>
<input type="checkbox"/> JRBC 2120 Realtime Reporting VI* .....	4
<input type="checkbox"/> JRBC 2140 Judicial Reporting Internship .....	2

*\* Students must complete the Realtime Reporting classes in sequence  
Additional speedbuilding courses available upon instructor approval.*

## Faculty Contact

[Jennifer Sati](#), RMR, CRR, CBC, CRI..... 763-576-4064

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: CART and Broadcast Captioning and Scoping/Proofreading certificate*

**Program Information**

The Anoka Technical College Communication Access Realtime Translation (CART) and Broadcast Captioning Certificate is a 16-credit program. The program consists of a core of machine shorthand realtime theory; speedbuilding and accuracy courses; captioning technology and procedures courses; and courses to help students become familiar with the Deaf community. Students use court reporting/captioning software and equipment currently used in industry. The central objective of the CART and Broadcast Captioning Certificate is to train students to write conflict-free machine shorthand on a computer-compatible stenotype machine, utilizing the industry standard realtime translation rate of 98.5 percent verbatim accuracy, or higher, with variable speeds of 180-200 words per minute (wpm).

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes.

1. Write a realtime translation theory.
2. Demonstrate competency in English, law/legal terminology, anatomy/medical terminology, captioning technology and procedures, and current events.
3. Transcribe a minimum of three (3), (5) five-minute, (2) two-voice, non-realtime tests with a minimum of 97 percent accuracy, dictated at a minimum speed of 225 wpm.
4. Transcribe a minimum of three (3), (5) five-minute realtime literary tests with a minimum of 97 percent verbatim accuracy, dictated at a minimum speed of 180 wpm.
5. Write three (3), 15-minute realtime literary broadcast material takes at 180 wpm (syllabic and/or word count) at 98.5 percent verbatim accuracy, following NCRA's What is an Error? guidelines. The instructor will grade a random (5) five-minute selection from each 15-minute take.
6. Write two (2), 30-minute class lectures, meeting/seminar programs, or Web cast meeting segments with a goal of 98.5 percent verbatim accuracy, or higher, with variable speeds of 180-200 wpm, following NCRA's What is an Error? guidelines. The instructor will grade a random (5) five-minute selection from each 30-minute take.
7. Participate in an internship consisting of 25 verified hours of actual writing and 15 hours of research and dictionary preparation during the internship experience.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

The prerequisite for JRBC 2127 Captioning Technology and Procedures is JRBC 2000 Realtime Reporting IV.

**Admission Requirements**

Students registering for this certificate need to be currently enrolled in the Judicial Reporting A.A.S. program OR be working in the court reporting field and want to retrain to work in the Captioning/CART industries, with advisor approval.

**Accreditation/Certification**

The CART and Broadcast Captioning Certificate was created to meet or exceed National Court Reporters Association (NCRA) standards set out by the Council on Approved Student Education (CASE).

The Judicial Reporting/Broadcast Captioning/CART programs are approved by NCRA. Upon graduation, students will be ready to take the NCRA's Certified Realtime Reporter (CRC) certification exam. National Court Reporters Association, [www.ncraonline.org](http://www.ncraonline.org).

**Program Essentials**

Laptop, steno machine, Eclipse student software or professional software. Please see instructor for specific requirements before purchasing any equipment. Also see *Tuition and Fees* for more information.

**Graduation Requirements**

Students must earn a grade of "B" or better in Realtime Reporting VI and the CART and Broadcast Captioning Internship and a grade of "C" or better in all other coursework in order to graduate.

By earning a B or higher in CART and Broadcast Captioning Internship (JRBC 2135), this includes the following:

- Students shall write three (3), five (5)-minute realtime literary broadcast material takes at 180 wpm (syllabic and/or word count) at 97 percent verbatim accuracy.
- Students will write and submit three (3), 15-minute unedited realtime literary broadcast material takes from an internship experience at 98.5 percent verbatim accuracy, or higher, with variable speeds of 180-200 wpm, following NCRA's What is an Error? guidelines. The instructor will grade a random (5) five-minute selection from each 15-minute take.
- Students will write two (2), 30-minute class lectures, meeting/seminar programs, or Web cast meeting segments from an internship experience with a 98.5 percent verbatim accuracy, or higher, with variable speeds of 180-200 wpm, following NCRA's What is an Error? guidelines. The instructor will grade a random (5) five-minute selection from each 30-minute take.
- Students shall transcribe a minimum of two (2), (5) five-minute, (2) two-voice, non-realtime tests with a minimum of 97 percent accuracy, dictated at a minimum speed of 225 wpm.
- Students shall complete at least 25 verified hours of actual writing and 15 hours of research and dictionary preparation during the internship experience.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

# CART and Broadcast Captioning

Certificate

## Industry Information

Completion of the CART and Broadcast Captioning certificate allows graduates to work in a variety of settings either as broadcast captioners or as CART providers.

Broadcast captioners use realtime machine shorthand skills to create the captioning you see on television. This captioning is created to allow access to television broadcasts for people who are deaf and hard of hearing. Broadcast captioners work doing on-air captioning of live programming.

CART is a service that can be requested by people who are hard of hearing as an alternative to having a sign language interpreter. It falls under the Americans with Disabilities Act (ADA) as one way of providing equal access to services. Graduates can find work as CART providers in legal, educational and various trade fields.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester .....January

## Technical Education: 12 Credits

<b>First Semester</b> .....	<b>11</b>
<input type="checkbox"/> ASL 1000 Deaf Studies/Culture* .....	3
<b>OR</b>	
<input type="checkbox"/> ASL 1100 American Sign Language .....	3
<input type="checkbox"/> JRBC 2120 Realtime Reporting VI.....	4
<input type="checkbox"/> JRBC Elective ( <i>Please see advisor</i> ) .....	4
<b>Second Semester</b> .....	<b>5</b>
<input type="checkbox"/> JRBC 2127 Broadcast Captioning & CART Procedures & Research	3
<input type="checkbox"/> JRBC 2135 Broadcast Captioning & CART Internship .....	2

## Faculty Contact

[Jennifer Sati](#), RMR, CRR, CBC, CRI..... 763-576-4064

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*Also see: Judicial Reporting AAS and Scoping/Proofreading certificate*

## Program Information

The Anoka Technical College Scoping/Proofreading certificate is a 29-credit program to be completed in one-and-a-half years. Scoping/Proofreading students learn shorthand theory with Judicial Reporting students. Students also take Legal Terminology, Medical Terminology, Realtime Reporting Orientation, Realtime Reporting Technology, Business English and Transcription and English courses. There are three additional classes Scoping/Proofreading students are required to take: Advanced Proofreading and English Skills, Scoping Procedures and Advanced Transcript Production.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- The prerequisite for JRBC 1005 is ADSC 1003 Introduction to Keyboarding and Speedbuilding or successful Keyboarding test out at 25 wpm or more.

## Program Essentials

Laptop, steno machine, Eclipse student software. Students may use a loaner steno machine from the department. See instructor for specific requirements before purchasing any equipment.

## Graduation Requirements

All Anoka Technical College students seeking a Scoping/Proofreading certificate must earn a grade of “C” or higher in every course in the program.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Scopists and proofreaders work in conjunction with court reporters to produce the final transcript that is prepared from court proceedings or depositions. Transcripts are accurate verbatim written records of the proceedings. At the end of a proceeding, some court reporters send their files to a scopist, who then edits the job for the court reporter. Scopists need to know how to read shorthand notes and use court reporting software. Other court reporters edit their own work but hire proofreaders to read over their transcripts to check for errors.

## Wages/Outlook/Advancement

Scopists and proofreaders are self-employed and are paid by the page. Earnings are contingent on the following: time worked, expertise, speed, and efficiency.

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester..... August  
Spring Semester ..... January

## Program Sequence

<b>First Semester</b> .....	<b>8</b>
<input type="checkbox"/> JRBC 1000 Realtime Reporting Orientation .....	1
<input type="checkbox"/> JRBC 1005 Realtime Reporting I .....	4
<input type="checkbox"/> JRBC 1031 Foundations of Law .....	3
<b>Second Semester</b> .....	<b>10</b>
<input type="checkbox"/> JRBC 1105 Realtime Reporting II .....	4
<input type="checkbox"/> JRBC 1120 Realtime Reporting Technology .....	3
<input type="checkbox"/> JRBC 2011 Transcription & English I .....	3
<b>Third Semester</b> .....	<b>11</b>
<input type="checkbox"/> HLTH 1040 Medical Terminology .....	2
<input type="checkbox"/> JRBC 2016 Transcription & English II .....	3
<input type="checkbox"/> JRBC 2030 Judicial Reporting Procedures .....	3
<input type="checkbox"/> JRBC 3101 Scoping Procedures .....	3

## Faculty Contact

[Jennifer Sati](#), RMR, CRR, CBC, CRI..... 763-576-4064

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: [Judicial Reporting AAS](#) and [CART and Broadcast Captioning certificate](#)*

**Program Information**

The Anoka Technical College Associate of Applied Science (AAS) degree in Legal Assistant (LA) is a 60-credit program that consists of a core of general administrative courses, designed to develop basic skills, and additional credits of specialized legal courses.

In addition to basic keyboarding, accounting, and English language skills, the legal administrative assistant student will receive training in computer operations and legal software, legal transcription and document preparation.

**Program Learning Outcomes**

By completing this program, students will achieve the following learning outcomes:

1. Communicate effectively including remote technology, think critically to solve problems, interact in complex environments, and other general education competencies needed for success in careers.
2. Demonstrate competency in creating letters and legal documents, including the use of Microsoft Word.
3. Demonstrate the requisite skills for employment as defined by Association for Legal Professionals (NALS) and the Legal Assistant Program Advisory committee. The Legal Assistant Program will deliver an industry-validated technical education Legal Assistant curriculum.
4. Successfully fulfill their internship at the legal host sites.
5. Be employment ready or able to continue their education.

**Course Prerequisites**

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a "C" or better.

- **ADSC 1003** is a prerequisites for ADSC 1010.
- **ADSC 1031 and ADSC 1064** prerequisites READ 0900 or READ 0960 or appropriate test score.
- **ENGL 1107 or ENGL 2105** prerequisites ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test score

**Graduation Requirements**

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

**Transfer Opportunities**

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

**Wages/Outlook/Advancement**

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

**Industry Information**

As a legal assistant, you will work for lawyers in private law firms, governmental offices, legal departments of corporations, court houses, legal aid offices, or the offices of county attorneys or public defenders. The legal assistant functions as an assistant to the lawyer or judge. Duties may include preparing legal documents, billing and accounting, processing correspondence, transcribing, communicating with clients, utilizing a variety of software, and organizing and managing a busy legal practice.

**Start Dates**

Fall Semester..... August

Spring Semester ..... January

**MnTC General Education**

Nine credits of general education credits from the Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

**Program Sequence**

**First Semester** ..... 14

ADSC 1003 Introduction to Keyboarding and Speedbuilding..... 2

ADSC 1010 Keyboarding I ..... 3

ADSC 1031 Business English Skills ..... 3

ADSC 1064 Government, Courts and Criminal Law ..... 3

INTS 1000 Critical Thinking Applications for College ..... 3

**Second Semester**..... 16

ADSC 1006 Business Law ..... 4

ADSC 1054 Office Bookkeeping ..... 4

ADSC 1197 Microsoft Word ..... 4

ENGL 1107 Composition I ..... 4

**OR**

ENGL 2105 Business and Technical Writing..... 4

**Third Semester** ..... 15

ADSC 1075 Corporate Law, Collections and Bankruptcy ..... 3

ADSC 1085 Probate and Real Estate Law ..... 4

ADSC 1111 Legal Transcription ..... 2

ADSC 1171 Microsoft Excel ..... 2

[MnTC General Education Elective](#) ..... 4

**Fourth Semester** ..... 15

ADSC 1095 Family Law and Civil Litigation ..... 4

ADSC 1100 Legal Research, Citations, and Office Procedures ..... 4

ADSC 1136 Legal Admin. Assistant Internship ..... 2

[MnTC General Education Elective](#) ..... 5

**Faculty Contact**

[Deborah Allen](#)..... 763-576-4024

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Legal Assistant AAS diploma and Legal Assistant certificate*

### Program Information

The Anoka Technical College Legal Assistant (LA) diploma is a 35-credit online program that consists of technical legal specialty courses plus a core of general education classes designed to develop basic skills.

This online program combines basic administrative assistant courses with specialized legal courses to provide graduates a broad based skill set for success in the work place.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes:

1. Communicate effectively including remote technology, think critically to solve problems, interact in complex environments, and other general education competencies needed for success in careers.
2. Demonstrate competency in creating letters and legal documents, including the use of Microsoft Word.
3. Demonstrate the requisite skills for employment as defined by Association for Legal Professionals (NALS) and the Legal Assistant Program Advisory committee. The Legal Assistant Program will deliver an industry-validated technical education Legal Assistant curriculum.
4. Successfully fulfill their internship at the legal host sites.
5. Be employment ready or able to continue their education.

### Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a “C” or better.

- **ADSC 1064** prerequisites READ 0900 or READ 0960 or appropriate test score.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

As a legal assistant, you will work for lawyers in private law firms, governmental offices, legal departments or corporations, court houses, legal aid offices, or the offices of county attorneys or public defenders. The legal assistant functions as an assistant to the lawyer or judge.

### Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester .....August  
Spring Semester .....January

### Program Sequence

<b>First Semester</b> .....	<b>17</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding and Speedbuilding .....	2
<input type="checkbox"/> ADSC 1006 Business Law .....	4
<input type="checkbox"/> ADSC 1111 Legal Transcription .....	2
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1197 Microsoft Word .....	4
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College .....	3
<b>Second Semester</b> .....	<b>18</b>
<input type="checkbox"/> ADSC 1064 Government, Courts, and Criminal Law .....	3
<input type="checkbox"/> ADSC 1075 Corporate Law, Collections and Bankruptcy .....	3
<input type="checkbox"/> ADSC 1085 Probate and Real Estate Law .....	4
<input type="checkbox"/> ADSC 1095 Family Law and Civil Litigation .....	4
<input type="checkbox"/> ADSC 1100 Legal Research, Citations and Office Procedures .....	4

### Faculty Contact

[Deborah Allen](#) ..... 763-576-4024

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Legal Assistant AAS degree and Legal Assistant certificate*



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## Program Information

The Anoka Technical College Legal Assistant certificate is a 17-credit online program that consists of administrative support career and legal specialty courses to provide graduates a specialty area in law for success in the workplace.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes:

1. Illustrate proficiency in use of Microsoft Excel.
2. Demonstrate knowledge of keyboard.
3. Compose legal correspondence and legal documents.
4. Employ Microsoft Word.
5. Recognize legal terminology.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English, and/or reading courses with a “C” or better.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

Legal assistants support lawyers in private law firms, government offices, legal departments of corporations, courthouses, legal aid offices, or the offices of county attorneys, public defenders, and judges. Duties may include preparing legal documents, processing correspondence, transcribing, communicating with clients, and utilizing a variety of software.

## Wages/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester .....January

## Program Sequence

<b>First Semester</b> .....	<b>17</b>
<input type="checkbox"/> ADSC 1003 Introduction to Keyboarding and Speedbuilding .....	2
<input type="checkbox"/> ADSC 1111 Legal Transcription .....	2
<input type="checkbox"/> ADSC 1171 Microsoft Excel .....	2
<input type="checkbox"/> ADSC 1197 Microsoft Word .....	4
<input type="checkbox"/> INTS 1000 Critical Thinking Applications for College .....	3
<b>Program Electives</b> .....	<b>4</b>

*Please select one of the following courses:*

<input type="checkbox"/> ADSC 1006 Business Law .....	4
<input type="checkbox"/> ADSC 1085 Probate and Real Estate Law .....	4
<input type="checkbox"/> ADSC 1095 Family Law and Civil Litigation .....	4
<input type="checkbox"/> ADSC 1100 Legal Research, Citations and Office Procedures .....	4

## Start Dates

Fall Semester.....August  
Spring Semester .....January

## Faculty Contact

[Deborah Allen](#) ..... 763-576-4024

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Legal Assistant AAS degree and diploma*



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# Supervisory Management

Associate of Applied Science (AAS) Degree

Technical Requirements..... 45

General Education/MnTC ..... 15

Total Credits ..... 60

## Program Information

Today's organizations demand exceptional front-line supervisors and managers, people who can lead and inspire others in challenging economic times. The Anoka Technical College Associate of Applied Science (AAS) degree in Supervisory Management program prepares students to excel in leadership positions, achieving mastery of business operations, human resources management, and continuous quality improvement. Our evening program is perfect for the working adult in a new supervisory role, people transitioning into new careers, and anyone seeking to inspire others.

## Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Apply effective diversity strategies in a global workplace.
- Demonstrate critical and analytical thinking skills.
- Practice professional behavior and interpersonal communication skills.
- Develop and implement change strategies.
- Demonstrate visionary leadership.
- Apply ethical marketing, management, and organizational theories.
- Apply human resource management practices.
- Plan, prepare, and deliver effective oral and written communications.
- Demonstrate financial management skills.
- Utilize current technology in the workplace.
- Apply customer-focused strategies.
- Apply continuous improvement strategies by exercising creativity and innovation.

## Course Prerequisites

Some courses may require appropriate test score or completion of basic math, basic English and/or reading courses with a "C" or better.

## Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

## Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

## Industry Information

The supervisory field covers all areas of the private and public sector. Business and industry consistently seek out qualified employees who can move into the supervisory ranks. Anoka Technical College's Supervisory Management program prepares individuals to perform successfully as supervisors.

## Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

## Start Dates

Fall Semester.....August  
Spring Semester ..... January

## General Education/MnTC Requirements: 15 Credits

Fifteen (15) credits of general education credits from the Minnesota Transfer Curriculum (MnTC) are required. MnTC credits must be from three different goal areas and can be completed separate from or together with the technical credit requirements.

[MnTC General Education Elective](#) ..... 15

*Note: MnTC credits are not listed in your program sequence plan. Please see your faculty advisor or enrollment services for help in planning when to complete your MnTC credits.*

## Program Courses

*Courses can be completed in any order. Some courses are only offered in fall and some only in spring.*

**Human Resources Development Certificate..... 15**

SMGT 1612 Human Resources Management ..... 3

SMGT 1614 Performance Management ..... 3

SMGT 1616 Employment Law ..... 2

SMGT 1618 Employee Training & Coaching ..... 3

SMGT 1620 Work Teams & Facilitation Skills ..... 2

SMGT 1622 Field Study II ..... 2

**Quality Supervision Certificate ..... 16**

SMGT 1624 Quality Tools & Creativity ..... 3

SMGT 1626 Management of Safety ..... 2

SMGT 1628 Documentation/Written Communication Skills .. 2

SMGT 1630 Field Study III ..... 2

SMGT 2600 Accounting for Non-Financial Managers ..... 2

SMGT 2602 Project Management/Problem Solving ..... 3

SMGT 2604 Leadership Development ..... 2

**Supervisory Leadership Certificate..... 14**

SMGT 1600 Management Education Planning ..... 2

SMGT 1602 Supervision Fundamentals ..... 3

SMGT 1604 Interpersonal Skills/Customer Service ..... 2

SMGT 1606 Managing Change & Conflict ..... 2

SMGT 1608 Personal Leadership ..... 3

SMGT 1610 Field Study I ..... 2

## Faculty Contact

Nick Hockert..... 763-576-4195

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Human Resources Development certificate, Supervisory Leadership certificate, and Quality Supervision certificate*



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### Program Information

Font-line supervisors and managers are critical to organizational effectiveness and are essential personnel in business and industry. The Human Resources (HR) certificate prepares learners to develop foundational and operational knowledge of the HR function, including recruiting, interviewing, selecting, scheduling, performance appraisal process, benefits administration, compensation, equal employment opportunity (EEO), diversity, inclusive cultures, and strategic talent management. Learners complete essential coursework and a final applied project in partnership with an actual organizations' HR department.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Apply effective diversity strategies in a global workplace.
- Demonstrate critical and analytical thinking skills.
- Practice professional behavior and interpersonal communication skills.
- Develop and implement change strategies.
- Demonstrate visionary leadership.
- Apply ethical marketing, management, and organizational theories.
- Apply human resource management practices.
- Plan, prepare, and deliver effective oral and written communications.
- Demonstrate financial management skills.
- Utilize current technology in the workplace.
- Apply customer-focused strategies.
- Apply continuous improvement strategies by exercising creativity and innovation.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The human resources field covers all areas of the private and public sector. Business and industry consistently seek out qualified employees who can move into the supervisory ranks. Anoka Technical College's Supervisory Management program prepares individuals to perform successfully as supervisors.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
Spring Semester ..... January

### Program Sequence

<b>Fall Semester</b> .....	<b>6</b>
<input type="checkbox"/> SMGT 1612 Human Resources Management .....	3
<input type="checkbox"/> SMGT 1614 Performance Management .....	3
<b>Spring Semester</b> .....	<b>9</b>
<input type="checkbox"/> SMGT 1616 Employment Law .....	2
<input type="checkbox"/> SMGT 1618 Employee Training & Coaching .....	3
<input type="checkbox"/> SMGT 1620 Work Teams & Facilitation Skills .....	2
<input type="checkbox"/> SMGT 1622 Field Study II .....	2

### Faculty Contact

[Nick Hockert](#).....763-576-4195

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*Also see: Supervisory Management AAS, Supervisory Leadership certificate, and Quality Supervision certificate*

### Program Information

Font-line supervisors and managers are critical to organizational effectiveness and are essential personal in business and industry. The Quality Supervision certificate prepares learners to develop foundational and operational knowledge of the continuous process improvement and quality management function, including total quality management and quality management function, including total quality management, Six Sigma, Lean, Kaizen, 5s, and project management. Both theory and practice are explored in depth. Learners complete essential coursework and a final applied project in partnership with an actual organization’s continuous improvement and quality management strategies and initiatives.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Apply effective diversity strategies in a global workplace.
- Demonstrate critical and analytical thinking skills.
- Practice professional behavior and interpersonal communication skills.
- Develop and implement change strategies.
- Demonstrate visionary leadership.
- Apply ethical marketing, management, and organizational theories.
- Apply human resource management practices.
- Plan, prepare, and deliver effective oral and written communications.
- Demonstrate financial management skills.
- Utilize current technology in the workplace.
- Apply customer-focused strategies.
- Apply continuous improvement strategies by exercising creativity and innovation.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The supervisory field covers all areas of the private and public sector. Business and industry consistently seek out qualified employees who can move into the supervisory ranks. Anoka Technical College’s Supervisory Management program prepares individuals to perform successfully as supervisors.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#).

### Start Dates

Fall Semester.....August  
Spring Semester ..... January

### Program Sequence

<b>Fall Semester</b>	.....	<b>7</b>
<input type="checkbox"/> SMGT 1624	Quality Tools & Creativity .....	3
<input type="checkbox"/> SMGT 1626	Management of Safety .....	2
<input type="checkbox"/> SMGT 2600	Accounting for Non-Financial Managers .....	2
<b>Spring Semester</b>	.....	<b>9</b>
<input type="checkbox"/> SMGT 1628	Documentation/Written Communication Skills ..	2
<input type="checkbox"/> SMGT 1630	Field Study III .....	2
<input type="checkbox"/> SMGT 2602	Project Management/Problem Solving .....	3
<input type="checkbox"/> SMGT 2604	Leadership Development .....	2

### Faculty Contact

[Nick Hockert](#).....763-576-4195

For information on how to apply, to schedule a tour, or for service during summer hours, contact Enrollment Services at 763-576-7710 or [EnrollmentServices@anokatech.edu](mailto:EnrollmentServices@anokatech.edu)

*Also see: Supervisory Management AAS degree, Supervisory Leadership certificate, and Human Resources Development certificate*

### Program Information

Front-line supervisors and managers are critical to organizational effectiveness and are essential personnel in business and industry. The Supervisory Leadership certificate prepare learners to develop foundational and operational knowledge of the supervisory function, including employment law, staffing, delegation and empowerment, change leadership, team management, interpersonal communication, recognition and positive reinforcement, conflict management, and diversity/inclusion. Learners complete essential coursework and a final applied project in partnership with an actual organization’s leadership team.

### Program Learning Outcomes

By completing this program, students will achieve the following learning outcomes.

- Apply effective diversity strategies in a global workplace.
- Demonstrate critical and analytical thinking skills.
- Practice professional behavior and interpersonal communication skills.
- Develop and implement change strategies.
- Demonstrate visionary leadership.
- Apply ethical marketing, management, and organizational theories.
- Apply human resource management practices.
- Plan, prepare, and deliver effective oral and written communications.
- Demonstrate financial management skills.
- Utilize current technology in the workplace.
- Apply customer-focused strategies.
- Apply continuous improvement strategies by exercising creativity and innovation.

### Graduation Requirements

All Anoka Technical College students seeking an Associate in Applied Science (AAS), diploma, or certificate must meet the cumulative grade point average (GPA) of 2.0 or higher.

### Transfer Opportunities

To see how credits from this program may transfer into other Anoka Technical College programs or into a program at another college, visit:

- [Minnesota Transfer](#)
- [Anoka Technical College transfer student](#)

### Industry Information

The supervisory field covers all areas of the private and public sector. Business and industry consistently seek out qualified employees who can move into the supervisory ranks. Anoka Technical College’s Supervisory Management program prepares individuals to perform successfully as supervisors.

### Wage/Outlook/Advancement

Wage information is available from the [Minnesota Department of Employment and Economic Development](#)

### Start Dates

Fall Semester.....August  
Spring Semester.....January

### Program Sequence

<b>Fall Semester</b> .....	<b>7</b>
<input type="checkbox"/> SMGT 1600 Management Education Planning .....	2
<input type="checkbox"/> SMGT 1602 Supervision Fundamentals .....	3
<input type="checkbox"/> SMGT 1604 Interpersonal Skills/Customer Service .....	2
<b>Spring Semester</b> .....	<b>7</b>
<input type="checkbox"/> SMGT 1606 Managing Change & Conflict .....	2
<input type="checkbox"/> SMGT 1608 Personal Leadership .....	3
<input type="checkbox"/> SMGT 1610 Field Study I .....	2

*Also see: Supervisory Management AAS degree, Human Resources Development certificate, and Quality Supervision certificate*

### Faculty Contact

[Nick Hockert](#)..... 763-576-4195

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*Also see: Supervisory Management AAS degree, Human Resources Development certificate, and Quality Supervision certificate*

# Course Descriptions

**Please note: Not all courses are offered every semester. Courses subject to change; please check your program guide sheet for the most up-to-date course information.**

## Administrative Specialist

### **ADSC 1003 Introduction to Keyboarding and Speedbuilding, 2 credits**

This course emphasized fundamental keyboarding skills as well as technique. Touch keyboarding is introduced and/or reviewed covering both alphabetic and figure keys. Speed and accuracy development is stressed and daily practice is expected. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **ADSC 1006 Business Law, 4 credits**

Business Law is an introduction to the principles of law as they apply to citizens and businesses. Topics include the civil and criminal court systems, contracts, Uniform Commercial Code, bailments, negotiable instruments, agency and employment, consumer protection laws, ethics, cyberlaw, environmental law, and employment discrimination. On-line activities will be included in the course. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **ADSC 1010 Keyboarding I, 3 credits**

Keyboarding I covers touch-typing skills and introduces basic word processing skills. The primary focus of this class is on increasing keyboarding speed and accuracy. Formatting techniques for business documents including letters, memos, tables, and reports and proofreading techniques are introduced. (Prerequisites: ADSC 1003) (3 credits lecture/0 credits lab)

### **ADSC 1025 Keyboarding Skillbuilding, 2 credits**

Keyboarding Skillbuilding is an advanced keyboarding course designed to increase keyboarding speed and accuracy to employment levels of 45+ net words per minute (nwpm). (Prerequisites: ADSC 1010 or equivalent keyboarding speed of 35 nwpm proven by testout with the instructor) (2 credits lecture/0 credits lab)

### **ADSC 1031 Business English Skills, 3 credits**

This course is designed to provide an in-depth study of English as used in a business setting. This review will include the use of many practical applications of grammar, word, and language mechanics such as punctuation, capitalization, and spelling. (Prerequisites: READ 0900 or READ 0960 or appropriate test score) (3 credits lecture/0 credits lab)

### **ADSC 1045 Administrative Office Procedures, 4 credits**

This course examines the role and responsibilities of the office professional. This course covers filing rules, records management procedures, transcription, telephone etiquette, setting up travel arrangements, compiling itineraries, producing trip expense reports, creating business documents including basic letters, memos, reports, notices, agendas, and minutes of meetings. The course also includes time management principles and the preparation and presentation of researched information utilizing software and verbal presentation skills. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **ADSC 1054 Office Bookkeeping, 4 credits**

This course covers an introduction to fundamental accounting principles with the primary focus on bookkeeping techniques and practices. Analyzing business transactions, recording transactions using general ledger software, cash and banking procedures, employer and employee payroll taxes, the basic financial statements, and completing the accounting cycle will also be covered. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **ADSC 1055 Electronic Health Records, 2 credits**

This course emphasizes essential computer concepts important for the successful use of computers in any medical career setting. The history and standards for electronic health records (EHR) will be examined, and simulated exercises with a fully functional electronic health records program will be completed. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **ADSC 1064 Government, Courts & Criminal Law, 3 credits**

This course begins with a review of the U.S. Constitution and the branches of government and continues with an introduction to the state and federal court systems, pleadings, and court procedures. The second half of the course covers types and classifications of crimes, criminal statutes, investigative procedures, Constitutional rights of the defendant, pretrial and trial procedures and documents for juveniles and adults, and sentencing patterns. (Prerequisites: READ 0900 or READ 0960 or appropriate test score) (3 credits lecture/0 credits lab)

### **ADSC 1075 Corporate Law, Collections & Bankruptcy, 3 credits**

The first half of this course covers types of business organizations, creation of a corporation, preparation of corporate documents, administration of corporate meetings, procedures for amending and dissolving a corporate structure and Intellectual Property. The second half covers debtors' rights and creditors' remedies under the Uniform Commercial Code, the collection process, and bankruptcy law. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **ADSC 1085 Probate & Real Estate Law, 4 credits**

During the first half of this course, the focus is on real estate law as it applies to a residential transaction. It includes the fundamentals of real estate law and the preparation of real estate documents. The second half of the course covers estate planning (wills, trusts, etc.) and estate administration (probate court). Conservatorships and guardianships are also included. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **ADSC 1095 Family Law & Civil Litigation, 4 credits**

The focus of this course is on the terminology, documents, and legal procedures used in family law and other civil litigation. The course includes marital dissolution, adoption, paternity, personal injury, product liability, medical malpractice, workers' compensation, and liquor liability using standard court procedures and alternate dispute resolution. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **ADSC 1100 Legal Research, Citations, & Office Procedures, 4 credits**

This course is designed to integrate legal office tasks into the electronic office setting. It includes law office personnel and facilities, legal ethics, filing and reminder systems, time and billing records, client rela-

tionships, communications methods, office equipment and supplies. This course is also an introduction to legal research. It includes finding the law and citing the law. (Prerequisites: None) (4 credits lecture/0 credits lab)

#### **ADSC 1111 Legal Transcription, 2 credit**

This is a transcription course which involves transcribing dictated material into usable documents. In addition, the course will cover basic formatting techniques for letters and legal pleadings. Emphasis is on the development of accuracy, proofreading, and correcting skills. (Prerequisites: None) (0 credits lecture/2 credits lab)

#### **ADSC 1136 Legal Assistant Internship, 2 credits**

This course is designed to provide the student with a purposeful occupational experience in a legal setting. Each internship is individually arranged to allow the student to apply classroom skills to an on-the-job situation. (Prerequisites: Completion of Legal Administrative Assistant program and instructor approval) (0 credits lecture/0 credits lab/2 credits OJT)

#### **ADSC 1142 Integrated Software Applications, 4 credits**

This course takes a project-based approach to teaching the integrating capabilities of Microsoft Office software while emphasizing applying critical-thinking skills to business situations. Previously learned software techniques; communications skills in the areas of spelling, grammar, punctuation, and formatting; and decision-making capabilities are utilized in the course as well. The class takes a simulation approach that requires problem-solving in the areas of appropriate choice of message format and software use, including cloud and collaboration tools. (Prerequisites: None) (4 credits lecture/0 credits lab)

#### **ADSC 1162 Microsoft PowerPoint, 2 credits**

This course is an in-depth study of Microsoft PowerPoint covering creating and editing a presentation with pictures, shapes, and WordArt. Also covered is reusing presentation, adding media and animation, and navigating a presentation using hyperlinks and action buttons. The class will also explore customizing slide, handout, and notes masters and modifying a presentation with customized text boxes, SmartArt, and shapes. Appropriate presentation design concepts are reviewed. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ADSC 1171 Microsoft Excel, 2 credits**

This course offers an in-depth presentation of functionality of Microsoft Excel in order to acquaint student with the proper procedures to create worksheets suitable for coursework, professional purposes, and personal use. The course uses an exercise-oriented approach that allows learning by doing. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ADSC 1181 Microsoft Access, 2 credits**

This course is an in-depth study of Microsoft Access that covers creating and maintaining a database along with creating simple tables, queries, reports and forms. More advanced techniques for creating complex queries and customized reports and forms will also be covered. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ADSC 1197 Microsoft Word, 4 credits**

This course covers utilization of Microsoft Word software to perform word processing applications. This intensive course covers both basic and advanced features of the software package. The concepts and applications taught in the course will promote decision-making, problem solving, and critical thinking. (Prerequisites: None) (4 credits lecture/0 credits lab)

#### **ADSC 1206 Written Business Communications, 4 credits**

This course covers the process of creating effective business messages. Communication skills will be developed by composing business correspondence. Proper grammar, spelling, punctuation, and capitalization rules will be reviewed. Projects will focus on effective writing with an emphasis on positive, negative, informative, and persuasive messages. Writing for technology applications such as e-mail, social media, and blogs is included along with job-search documents including a resume and cover letter. (Prerequisites: ADSC 1031) (4 credits lecture/0 credits lab)

#### **ADSC 1283 Medical Office Procedures, 4 credits**

This course introduces the concepts and skills needed for a successful career as a medical administrative professional and explores the use of a medical practice management software (scheduling, billing, and insurance) and electronic health records software, including entering front office, clinical care, and coding information. Other topics include various claim forms, financial policies and collections, the Health Insurance Portability and Accountability Act (HIPAA), office professionalism, and customer service skills. (Prerequisites: None) (4 credits lecture/0 credits lab)

### **Architectural and Construction Technology**

#### **ARCH 1000 Residential Construction, 2 credits**

Techniques for residential construction in Minnesota are the focus of this course. Building materials and construction methods will be covered through lecture and illustrated examples. Building systems covered will be the footing, foundation, floor framing, wall framing, and roof framing moisture protection and windows and doors. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ARCH 1002 Construction Print Reading, 2 credits**

This course covers the knowledge required for a drafter or estimator to interpret residential and commercial construction drawings. Topics covered include architectural floor plans, elevations, sections, details and material schedules. Also covered are drafting symbols, material abbreviations, reading an architectural scale ruler, construction calculations and dimensioning standards for the construction industry. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ARCH 1004 Introduction to the Architectural Profession, 2 credits**

This course introduces the entry-level architectural technician to topics in the profession of architecture. Introducing the business aspects of the architectural profession will prepare the graduate architectural technician for a role in an office setting. Topics covered will be project economics, project delivery methods, contracts, industry organizations, construction codes and zoning regulations, as well as job seeking skills for the architectural industry. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ARCH 1015 Commercial Construction, 2 credits**

Techniques for constructing light commercial to high-rise construction is this course focus. Building materials and construction methods will be covered with lecture and illustrated examples. Building systems covered are footings, foundations, masonry, steel framing, precast concrete, curtain wall, flat roof construction, hollow metal doors, aluminum window frames and moisture protection. (Prerequisites: None) (2 credits lecture/0 credits lab)



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### **ARCH 1031 Building Systems, 2 credits**

The architectural technician needs to understand all components of a building, including: plumbing, heating/air conditioning and ventilation (HVAC), electricity and insulation R-values. An overview of each component will be covered through lecture, illustrated examples and projects. (Prerequisites: ARCH 1000) (2 credits lecture/0 credits lab)

### **ARCH 1040 Residential Graphics, 1 credit**

This course focuses on the process to analyze and draw a small one-story residence design to meet industry standards and building codes. From a given design concept, students will draw a floor plan, learning how to determine the correct dimensions for placing walls and selecting code compliant door and window sizes. Exterior elevations of the house will be drawn based on wall section details that will also be drawn. The drawing will be created on computer aided design (CAD) software. (Prerequisites: None; Co-requisites: ARCH 1043) (0 credits lecture/1 credit lab)

### **ARCH 1045 Commercial Graphics, 1 credit**

This course is designed to advance knowledge in commercial construction detailing. The major focus is understanding the industry standards of drawing commercial building material connections using computer aided design (CAD) software. (Prerequisite: ARCH 1040) (0 credits lecture/1 credit lab)

### **ARCH 1043 Architectural CAD I, 3 credits**

The architectural technician must gain mastery of industry standard Computer Aided Drafting (CAD) software and computer drafting techniques. This is the first course required to gain mastery. This course will be using the newest version of industry standard CAD software to teach the basic drawing and editing commands. Other topics covered will be placing text, dimensioning, and plotting architectural drawings. The course covers drawing simple floor plans and exterior elevations of a building. (Prerequisites: None) (1 credit lecture/2 credits lab)

### **ARCH 1052 Architectural CAD II, 3 credits**

You will begin to see the power of AutoCAD software when taking this course. This course is a continuation of Architectural CAD I. You will continue to gain mastery of the draw and edit commands, and also you will become familiar with advanced commands the architectural technician will use on the job. This course will focus on the use of paper space/model space for architectural drafting applications. The drawing projects will be residential plans, sections, and exterior elevations. (Prerequisites: ARCH 1040 and ARCH 1043) (1 credit lecture/2 credits lab)

### **ARCH 2005 Residential CAD Studio, 4 credits**

This course covers creating residential construction drawings use by a residential building contractor to obtain bids and building permits using computer aided design (CAD) software. Topics covered include analyzing home design, implementing wood framing technology, complying with residential building codes, and CAD drafting skills. (Prerequisites: ARCH 1000 and ARCH 1052) (1 credit lecture/3 credits lab)

### **ARCH 2025 Revit Architectural 3D CAD, 2 credits**

This course provides a hands-on learning environment in the 3D modeling software, Revit. The course focus will be understanding build and modify commands, manipulating views, inserting 3-D objects, rendering, and preparing drawing sheets for plotting construction documents. (Prerequisites: ARCH 1043) (1 credit lecture/1 credit lab)

### **ARCH 2027 Intermediate Revit Architecture 3D CAD, 2 credits**

This course is designed to build on the fundamental understanding and skills of a beginning Revit Architecture user. The primary objective of this intermediate course is to expand the student's knowledge of the power of BIM (building information modeling). The student will complete a residential project and all the required software settings and sheet set up for construction drawings. Also, 3-D modeled rendering will be emphasized and the student will create a simple walk through of the project. (Prerequisites: ARCH 2025 or by instructor approval of prior Revit Architecture experience) (1 credit lecture/1 credit lab)

### **ARCH 2029 Advanced Revit 3D CAD, 3 credits**

This course will focus on the creation of building information model for a commercial building, resulting in a construction drawing set. Topics covered include advanced modeling commands, linking CAD drawings, worksets, rendering techniques and the creation of 3D family objects. (Prerequisites: ARCH 2027) (1 credit lecture/2 credits lab)

### **ARCH 2030 Building Codes, 1 credit**

The construction building code provides a framework for the architectural design process. A code review must be performed to ensure conformity to life and safety issues. The focus of this course will be the International Building Code and Minnesota Accessibility Code. Course topics will include occupancy groups, occupancy loads, building area, building height, types of construction, means of egress and accessibility dimensional clearances. (Prerequisites: ARCH 1015) (1 credit lecture/0 credits lab)

### **ARCH 2055 Commercial CAD Studio, 3 credits**

This course will focus on the creation of a building information model for a commercial building, resulting in a construction drawing set. Topics covered include advanced modeling commands, linking CAD drawings, worksets, rendering techniques and the creation of 3D family objects. (Prerequisites: ARCH 2027) (1 credit lecture/2 credits lab)

### **ARCH 2070 Commercial Design, 2 credits**

The thought process of an architect during the design phase of commercial construction will be the focus of this course. The students will be exposed to building design, office space planning and major architectural history movements that have shaped the American architectural scene. Other topics include scale, proportion, circulation patterns, and exterior building massing. The student will take from the course an understanding of the architectural design process and terminology used when discussing architectural design. (Prerequisites: ARCH 1015) (1 credit lecture/1 credit lab)

### **ARCH 2085 Structural Technology, 3 credits**

This course will focus on the basic concepts of building structures for wood and steel structural systems. Topics covered include examining section and material properties, calculating live load and dead load, calculating maximum moment and maximum shear in beams, and calculating maximum beam deflection. Calculation results will determine the size of the joist, beam or column to be selected for a building. Other topics include interpreting structural drawing details, analyzing welded and bolted connections, and drafting structural framing and plans and connection details. (Prerequisites: ARCH 1000 and ARCH 1043) (3 credits lecture/0 credits lab)



## American Sign Language

### **ASL 1000 Deaf Studies/Culture, 3 credits**

This course is designed to introduce and help students understand the Deaf community as a linguistic and cultural minority group. The role of Deaf people in the larger society, political activism, laws, access to information, educational philosophies and methods, and communication systems will be introduced. Students will learn the differences between Deaf; deaf, late-deaf, oral deaf, and hard of hearing. The course also examines the historical treatment of deaf people as well as educational influences, causes, and treatment of deafness. Students will learn about sign interpreters, oral interpreters, and transliterators and how to hire an interpreter. (MN Transfer Goal 7) (3 credits lecture/0 credits lab)

### **ASL 1100 American Sign Language I, 3 credits**

This MN Transfer course introduces students to American Sign Language, the visual/gestural language used by the Deaf community, and aspects of Deaf culture. The differences in communication preferences used by deaf individuals will be explored, as well as techniques to best communicate with people who are hard of hearing. The student will learn how to articulate all the letters and numbers; develop accuracy in regard to letter formation, palm orientation and hand position; finger-spell words clearly and accurately; recognize words and numbers. (MN Transfer Goal 8) (3 credits lecture/0 credits lab)

## Automotive Technician

### **AUTO 1000 Orientation and Safety, 1 credit**

This course covers Occupational Safety and Health Administration (OSHA) safety requirements, along with general shop procedures needed before entering the automotive lab. Orientation will include shop policies, location and utilization of appropriate safety equipment, including but not limited to eye-wash stations, fire extinguisher and exhaust ventilation systems. (Prerequisites: None) (1 credit lecture/0 credits lab)

### **AUTO 1010 General Automotive Service, 2 credits**

This course explores the careers available in the automotive industry. The purpose and identification of hand tools, special automotive tools, automotive shop, and diagnostic equipment, including tire mounting and balancing equipment, vehicle lifts, jacking equipment, and precision measuring devices will be discussed and demonstrated. Students will be provided the opportunity to demonstrate the safe and accurate use of those tools and equipment. General preventative maintenance and service procedures of the engine, drivetrain, and running gear will be addressed and performed. Automotive service information systems and other resources will be addressed and utilized. (Prerequisites: None) (Co-requisites: AUTO 1000, AUTO 1167, AUTO 2145, and AUTO 2159) (1 credit lecture/1 credit lab)

### **AUTO 1167 Vehicle Electronics, 5 credits**

This course reviews the fundamentals of electricity and electronics as applied to the automotive industry. Topics addressed include the principles and theory of electricity, electrical terminology, electro-magnetism; including motors and induction, the principles of semi-conductors, basic automotive computer operation, including the operation of sensor, output or control signals, and data communication circuits. Also included in this course is the performance of accurate electrical measurements using a Digital Multi-meter (Volts, Ohms, Amps) and other appropriate tools; diagnosis and performance of electrical wiring repairs; and the understanding electrical system failures and basic di-

agnostic principles. Reading and interpreting vehicle service manual or electronic service information electrical wiring schematics will also be covered. (Prerequisites: None) (3 credits lecture/2 credits lab)

### **AUTO 2005 Supervised Internship I, 2 credits**

This course will require 80 hours of documented on-the-job work/training to be performed in an instructor approved and contracted automotive service facility. This course provides an opportunity for the student to apply knowledge and skills gained in the first semester Automotive Technician program courses to the real world service and repair environment. The student will also be provided opportunities to demonstrate, practice, and develop industry standard soft skills, including communication, team work, maintaining high quality of work, and demonstrating good personal habits, attitude, judgement, and initiative. (Prerequisites: AUTO 2145 and AUTO 2159) (Co-requisites: AUTO 2164, AUTO 2183, and AUTO 2166) (0 credits lecture/0 credits lab/2 credits OJT)

### **AUTO 2006 Supervised Internship II, 2 credits**

This course will require 80 hours of documented on-the-job work/training to be performed in an instructor approved and contracted automotive service facility. This course provides an opportunity for the student to apply knowledge and skills gained in the first and second semester of the Automotive Technician program courses to the real world service and repair environment. The student will also be provided opportunities to demonstrate, practice, and develop industry standard soft skills, including communication, team work, maintaining high quality of work, and demonstrating good personal habits, attitude, judgement, and initiative. (Prerequisites: AUTO 2005, AUTO 2164, AUTO 2166, and AUTO 2183) (Co-requisites: AUTO 2119 and AUTO 2129) (0 credits lecture/0 credits lab/2 credits OJT)

### **AUTO 2007 Supervised Internship III, 2 credits**

This course will require the student to perform 80 hours of documented on-the-job work/training at an instructor approved and contracted automotive service facility. This course provides an opportunity for the student to apply knowledge and skills gained in the first, second, and third semester of the Automotive Technician program courses to the real world service and repair environment. The student will also be provided opportunities to demonstrate, practice, and develop industry standard soft skills, including communication, team work, maintaining high quality of work, and demonstrating good personal habits, attitude, judgement, and initiative. (Prerequisites: AUTO 2006, AUTO 2119, and AUTO 2129) (Co-requisites: AUTO 2135, AUTO 2175, and AUTO 2187) (0 credits lecture/0 credits lab/2 credits OJT)

### **AUTO 2119 Engine Repair & Service, 6 credits**

This course covers the theory of operation and common service procedures associated with major engine repair. This includes the standard measurements of the cylinder head and block assemblies to determine if machine work is needed, and exploration of how the new engine technology is adapted to hybrid vehicles. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (3 credits lecture/3 credits lab)

### **AUTO 2129 Automatic Transmission Conditions, 6 credits**

This course covers the construction and operational theory of automatic transmissions/transaxles; the complete disassemble and reassemble of two different automatic transmission/transaxles with all clutch pack clearances; end-play measurements; including proper use of special disassemble and reassembly tools; and access and interpret scan tool



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use and diagnostic procedures for evaluating the automatic transmission data. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (3 credits lecture/3 credits lab)

#### **AUTO 2135 Manual Drive Train Systems & Service, 4 credits**

This course covers the operational theory and repair procedures of the drive train and axles of passenger cars and light duty trucks. Includes front drive and rear drive vehicles. Lab experiences provide an opportunity to service vehicles. (Prerequisites: AUTO 1010 and AUTO 1167) (1 credits lecture/3 credits lab) lecture/3 credits lab)

#### **AUTO 2145 Suspension & Steering System Service, 4 credits**

This course covers the operational theory and repair of automotive suspension and steering systems. Two-wheel and four-wheel alignment process and adjustments will be addressed. Service procedures for manual, power, and electric steering systems will be covered. Lab experiences will provide an opportunity to service a variety of vehicles. (Prerequisites: None) (Co-requisites: AUTO 1000, AUTO 1010, and AUTO 1167) (1 credit lecture/3 credits lab)

#### **AUTO 2159 Brake Systems & Service, 4 credits**

This course covers the operational theory and repair of automotive brakes and braking systems; principles of hydraulics, disc, drum, and parking brake systems; and Anti-lock Brake Systems (ABS) and Traction Control (TC) basics. Lab experiences will provide an opportunity to service a variety of vehicles and systems. (Prerequisites: None) (Co-requisites: AUTO 1000, AUTO 1010, AUTO 1167, and AUTO 2145) (2 credits lecture/2 credits lab)

#### **AUTO 2164 Chassis Electrical System, 3 credits**

This course emphasizes the description, operation, diagnosis, and service procedures related to chassis electrical systems. This includes vehicle lighting, instrumentation, windshield wipers and washers, power door locks, windows, and mirrors as well as passive restraint systems. Major vehicle accessories and body control module integration and operation will also be covered. Finally, electrical circuit repairs and the understanding and interpreting of electrical system service information and schematics will be addressed. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (1 credit lecture/2 credits lab)

#### **AUTO 2166 Starting & Charging Systems, 2 credits**

The description, operation, diagnosis, and service procedures related to automotive batteries will be addressed. The description, operation, diagnosis, and various service procedures related to automotive cranking motors and charging systems will be covered. Also included are descriptions of the various circuits used to control starter motor operation and charging system voltage regulation. Understanding and interpreting electrical system service information and schematics will also be addressed. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (1 credit lecture/1 credit lab)

#### **AUTO 2175 Automotive Climate Control & Service, 4 credits**

This course covers the principles of automotive heating, ventilation and air conditioning (HVAC) and the fundamental service procedures used to repair and maintain those systems. As part of this course, students should be able to successfully complete the Automotive Service Excellence (ASE) Refrigerant Recovery and Recycling Certification Program in order to meet the EPA regulations and requirements, which are detailed in section 609 of the Clean Air Act of 1990. Lab experience provide the opportunity to diagnose, repair, and service vehicles. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (1 credit lecture/3 credits lab)

#### **AUTO 2183 Fuel & Ignition Management Systems & Service, 6 credits**

This course covers the description, operation, diagnosis, and service procedures related to automotive fuel, emission, and ignition systems and the interaction of these systems. The history and evolution of these vehicle systems will be addressed to provide a path to understand the technology currently in use. The automobile industries impact on emissions and the technology changes undergone to reduce these emissions is also addressed. Computer controls of these systems will be covered in detail as will the understanding and interpreting of driveability related service information, procedures, and schematics. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167) (2 credits lecture/4 credits lab)

#### **AUTO 2187 Automotive Computer Systems & Driveability, 4 credits**

This course covers the theory and operating principles of automotive computer systems. Topics may include but are not limited to: On Board Diagnostics (OBD), scan tool usage, input sensors, and computer controlled driveability systems. Lab experiences provide the opportunity to service vehicles. (Prerequisites: AUTO 1010 and AUTO 1167) (1 credit lecture/3 credits lab)

#### **AUTO 2450 Fundamental Welding for Automotive, 3 credits**

This course focuses on the knowledge and hand skills needed to proficient in the processes of plasma cutting, and oxy-fuel heating and cutting. This course covers hands-on training with the Gas Metal Arc Welding (GMAW) process, using short circuit transfer on carbon steels in all positions. Safety requirements covered. (Prerequisites: None) (1 credit lecture/2 credits lab)

#### **AUTO 2460 Hybrid and Electric Vehicle Service and Safety, 4 credits**

This course focuses on the knowledge and hand skills needed to proficient Hybrid disabling and enabling, high voltage propulsion and safety awareness. This course covers hands-on training with thermal management, charging, high voltage isolation and energy production. (Prerequisites: AUTO 1000, AUTO 1010, and AUTO 1167, or Instructor's discretion) (2 credits lecture/2 credits lab)

### **Behavioral Health and Human Services**

#### **BHHS 1005 Introduction to Behavioral Health and Human Services, 2 credits**

This course will orient the student to the field of behavioral health and human services. An understanding of the roles that behavioral health workers play in the field will be introduced. Generic roles emphasizing change and responsibility are explored and identified. Major topics include: professional value assumptions, nature of work between behavioral health providers and clients, and work settings (casework, family and group work, behavioral interventions, and community development). The students will explore the history of the profession including how behavioral health and human services as a practice compares and contrasts with social work. Students will identify and practice the skills necessary for generalist behavioral health and human services practice. (Prerequisites: None; Corequisites: BHHS 1010) (2 credits lecture/0 credits lab)

#### **BHHS 1010 Direct Service Professionalism, 3 credits**

This course provides an overview of the rights and protections of persons with disabilities and prepares the student to work in a direct service setting. Emphasis is placed on teamwork, communication and



conflict resolution, working with families as well as diversity, confidentiality and advocacy. (Prerequisites: None; Corequisites: BHHS 1005) (3 credits lecture/0 credits lab)

#### **BHHS 1020 Physical/Developmental Supports I, 3 credits**

This course compares and contrasts the community support models to the former medical model. The course will guide the student in obtaining skills on how to support persons with various disabilities and explore augmentative and communication systems. This course will address specific support issues including common signs and symptoms of health concerns, standard precautions and blood borne pathogens, appropriate responses to emergency situations, basic medication concerns, and documentation techniques. In addition, students will learn about communication methods, relationship and sexuality issues, inclusion issues, and community resources for the individuals they will support. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **BHHS 1030 Person Centered Planning, 3 credits**

This course will outline person-centered planning and the utility of this process in translating personal choices, desires and strengths into a support plan. The student will review current laws and rules governing services to persons with disabilities and demonstrate an ability to facilitate a group process using a person-centered approach. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **BHHS 1040 Facilitating Positive Behaviors, 3 credits**

This course provides an overview of different challenging behaviors and provides methods and guidelines for correcting these behaviors. Additionally, this course explores how environmental factors like personal experiences and individual value systems affect decision making, behaviors, and responses to others' actions. This course introduces various assessment tools that can be used to identify challenging behavior, develop intervention plans, and document client progress. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **BHHS 1550 Social Service Projects, 3 credits**

This course will give students the opportunity to critically examine a social problem, then work as a group to create and implement a program that addresses the problem. Students will gain knowledge in assessing the problem, researching, designing, implementing and evaluating the chosen intervention. Group process learning will be utilized. Before beginning the group project, students will receive an overview of group learning principles and interpersonal skills required for effective participation in this project. (Prerequisites: BHHS1010 and BHHS1570) (3 credits lecture/0 credits lab)

#### **BHHS 1560 Social Welfare Services, 3 credits**

This course will discuss the history of social welfare as an institution. Various social problems will be examined and discussed in terms of at-risk populations, societal norms and values, and how policy is developed to address these problems. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **BHHS 1570 Introduction to Social Work, 3 credits**

This course will orient the student to the field of social work. An understanding of people as individuals and members of groups and communities using the Person-In Environment (PIE) approach will be introduced. Generic roles emphasizing change and responsibility are explored and identified. Major topics include: history of social work, professional value assumptions, nature of social work relationship, and social work settings: casework, family and group work, advocacy,

public and social welfare administration, and community development. The history of the profession, including influential social workers and the social conditions which lead to early social work movements, will be covered. Students will identify and practice the skills necessary for generalist social work practice. (Prerequisites: BHHS 1010) (3 credits lecture/0 credits lab)

#### **BHHS 2020 Physical/Developmental Supports II, 3 credits**

This course covers specific types of developmental, physical and mental disabilities including cerebral palsy, autism, mental retardation, epilepsy, Prader Willi, chromosomal disorders, deafness/hard of hearing, blindness, brain injury and mental health diagnosis. This course will guide the student in obtaining skills on how to support persons with these disabilities. (Prerequisites: BHHS 1020) (3 credits lecture/0 credits lab)

#### **BHHS 2050 Supportive Interventions, 4 credits**

This course will cover an in-depth analysis of assessment, plan design, implementation and evaluation of consumers. The course will cover assessing problem behavior, planning and implementing interventions, designing proactive manipulations and integrating a multi-intervention, multi-disciplinary team approach. The course will also explore the understanding of regulatory restrictions and guidelines on intervention and Rule 40, mental health issues sometimes associated with behavior, psychotropic medications and crisis intervention. (Prerequisites: BHHS 1010, BHHS 1020, BHHS 1030, and BHHS 1040) (4 credits lecture/0 credits lab)

#### **BHHS 2100 CSS Internship, 4 credits**

This course includes 180 hours of supervised worksite experience and 12 hours of class time to discuss the integration of knowledge and skills. Discussion topics include recognizing trends in the developmental disability field, identifying characteristics of special populations and analyzing the impact of the work environment on worker-client relationships. (Prerequisites: Program advisor approval) (0 credits lecture/0 credits lab/4 credits OJT)

### **Biology**

#### **BIOL 1106 (MnTC 2, 3) Principles of Biology, 4 credits**

Biological scientific inquiry and methodology will be taught within a laboratory and lecture context. Cell biology topics will emphasize cell structure, function, and the biochemical processes of respiration, metabolism, and photosynthesis. The study of heredity and genetics will focus on the Mendelian genetics and the molecular basis of inheritance, DNA, RNA, mitosis, and meiosis. Other topics include mechanisms and processes of evolution and current societal issues and breakthroughs in biology. (Prerequisites: READ 0900 or appropriate placement score) (MN Transfer Goals 2, 3) (3 credits lecture/1 credit lab)

#### **BIOL 1130 (MnTC 2, 3) Human Biology, 4 credits**

This course covers the basic principles of the organization, structures, and functions of the human body. Topics include: general biological theories; anatomical of each body system; basic physiological process and maintenance of homeostasis; human genetics and inheritance principles and their relation to evolution; and connections between the human body, societal issues, and disease. Student will make observations and analyze data related to the human body through laboratory exercises. (Prerequisites: READ 0900 or appropriate placement score) (MN Transfer Goals 2,3) (3 credits lecture/1 credit lab)



**BIOL 2100 (MnTC 2, 3) Anatomy & Physiology I, 4 credits**

Anatomy & Physiology I (A&P I) is a course designed to prepare students for advanced coursework required for health or allied healthcare educational pathways. This course emphasizes the anatomical and physiological organization and interrelationships of the major systems that comprise the human body. Building from the knowledge gained in Biology 1106, A&P I will focus mainly on the following systems: integumentary, musculoskeletal, nervous, endocrine, and sensory.

Laboratory dissection, experiments, and computer-assisted instruction will provide students with the necessary foundation of knowledge required for successful transition into A&P II. (Prerequisites: BIOL 1106) (MN Transfer Goals 2, 3) (3 credits lecture/1 credit lab)

**BIOL 2200 (MnTC 2, 3) Anatomy & Physiology II, 4 credits**

Anatomy & Physiology II is a course that builds on the foundation of Anatomy & Physiology I to prepare students for advanced coursework required for Nursing and other Allied Health Care Programs. This course continues to examine the human body from an anatomical and physiological examination of the I systems: digestive, urinary, respiratory, circulatory, immune, and reproduction. Students will gain a comprehensive understanding of human gross anatomy by participating in animal dissection, lab experiments, and computer-assisted instruction, while examining the interrelationships of the physiology that drives the human body. (Prerequisites: BIOL 2100) (MN Transfer Goals 2, 3) (3 credits lecture/1 credit lab)

**Biomedical Equipment Technician****BMET 1200 Biomedical Equipment and Terminology, 2 credits**

This course will cover test equipment used in the biomedical field. Electrical safety analyzers, defibrillator analyzers, and vital signs patient simulators will be demonstrated throughout the course. Terminology used in the biomedical field will be covered. (Prerequisite: ETEC 1202) (2 credits lecture/0 credits lab)

**BMET 1301 Biomedical Networking, 2 credits**

This course covers networking fundamentals for electronic engineering technicians and biomedical equipment technicians. Topics such as network layers, protocols, media, security, hardware, setup, and troubleshooting will be covered. The course introduces the safety, regulatory, and security requirements specific to networking mechatronic and biomedical equipment. (Prerequisites: ETEC 1151) (2 credits lecture/0 credits lab)

**BMET 2012 Biomedical Instrumentation, 4 credits**

This course covers theory and operations of medical test equipment. The course will introduce test and measurement equipment used for preventive maintenance, diagnosis and repair of medical equipment. A variety of biomedical transducers will be introduced. IEC 62353 (International Electrotechnical Commission) standards for electrical safety testing of medical devices will be discussed throughout the course. (Prerequisites: ETEC 1201) (3 credits lecture/1 credit lab)

**Business Data Analyst****BDAT 1000 Business Concepts, 2 credits**

This course details how information technology professionals and business experts work together to make investment and implementation decisions to support and organization's overall business goals. (Prerequisite: None) (2 credits lecture/0 credits lab)

**BDAT 1005 Data Analysis Fundamentals, 2 credits**

This course introduces the concepts of data analysis. Hands-on labs using current industry tools will be used to provide an opportunity to explore the data analysis process. (Prerequisites: None) (1 credit lecture/1 credit lab)

**BDAT 1010 Integrated Business Software, 3 credits**

This course is the intermediate study of computer applications from business productivity software suites for report, document, presentation and information development activities. (Prerequisite: TLIT 1005) (2 credits lecture/1 credit lab)

**BDAT 1025 Data Preparation for Analytics, 3 credits**

This course is designed to develop student proficiency in data management skills for decision making and use of analytic applications. Topics include methods and techniques for identification, retrieval, and preparation of data for processing with analytical software. This course demonstrates the skills necessary to effectively organize and retrieve quality data from different data sources for analytic applications. The latest tools and technologies will be used to perform hands-on labs. (Prerequisites: None; Co-requisites: BDAT 1030) (2 credits lecture/1 credit lab)

**BDAT 1030 Data Analysis, 4 credits**

This course is designed to introduce the fundamental concepts and statistical procedures used in data analytics, visualizations, and data management. Hands-on labs will be used to enhance student learning. (Prerequisite: None) (3 credits lecture/1 credit lab)

**BDAT 2145 Special Topics in Analytics, 3 credits**

Course topics will be determined based on current trends within the analytics industry. Knowledge and experience will be practiced utilizing new methods or techniques in data retrieval, analysis, and/or visualization. (Prerequisites: None) (2 credits lecture/1 credit lab)

**CNC Service Technician****MAIN 1100 Pneumatic & Hydraulic, 4 credits**

This course will cover the concepts of pneumatic and hydraulic systems employed in machine tool operation. The safety of operating, troubleshooting, and servicing these systems and the blueprints describing their construction will be emphasized. (Prerequisites: None) (1 credit lecture/3 credits lab)

**MAIN 2320 Electrical Motors and Sensors, 3 credits**

This course is structured to give the Computer Numerical Control (CNC) Service Technician knowledge in electrical motor operations. Sensor types, uses, and operation will be explored. Integration of safety in handling electrical components will be practiced. (Prerequisites: ETEC 1250 and ETEC 1113) (1 credit lecture/2 credits lab)

**MAIN 2330 Power Transmission, 4 credits**

This course is structured to give the Computer Numerical Control (CNC) Service Technician the fundamental knowledge to categorize mechanical, fluid, and electrical power systems. Troubleshoot power transmission systems for repair, replacement, adjustments and system specifications. Simulate lab experiences in troubleshooting and repairs. (Prerequisites: MAIN 1100) (1 credit lecture/3 credits lab)

### **MAIN 2340 Controls, 3 credits**

This course will expose students to the analysis and troubleshooting of a variety of control interfaces and corresponding servo controllers. Troubleshooting machine system parameters and ladder diagrams with binary and hexadecimal functions. Protected access to optional features will be covered. (Prerequisites: ETEC 1250, ETEC 1113, and MACH 1261) (1 credit lecture/2 credits lab)

### **MAIN 2400 Service/Machine Troubleshooting, 5 credits**

This course is designed to provide the student with practical training and experience as a Computer Numerical Control (CNC) Service Technician. Students will practice communicating with technical support, follow company protocols, and providing effective customer service. This course will also allow the student to hone their critical-thinking skills while using reference material to troubleshoot and repair CNC machines. (Prerequisites: MACH 1251, MAIN 2310, MAIN 2320, MAIN 2330, and MAIN 2340) (1 credit lecture/4 credits lab)

### **MAIN 2410 Preventative Maintenance, 2 credits**

This course will cover preventative maintenance of machine tool equipment for efficient operation. Execution of manufacturer lubrication and consumable replacements and their documentation will be accomplished. Concepts relating to the scheduling and use of maintenance software and predictive maintenance will also be covered. (Prerequisites: None) (1 credit lecture/1 credit lab)

### **MAIN 2420 Electrical Troubleshooting, 3 credits**

This course is designed to provide the student with practical training and experience as a Computer Numerical Control (CNC) Service Technician. Critical-thinking exercises will utilize documentation and procedures to diagnose and troubleshoot faulty electrical circuits. Critical-thinking skills will be used while working in simulated labs to repair machine electrical systems. Communication with technical support and all Lockout Tagout (LOTO) safety procedures will be covered. (Prerequisites: MACH 1251, MAIN 2310, MAIN 2320, MAIN 2330, and MAIN 2340) (1 credit lecture/2 credits lab)

### **MAIN 2430 Accuracies, 3 credits**

This course is structured to give the Computer Numerical Control (CNC) Service Technician the fundamental knowledge and ability to locate and perform machine specification/standards requirements related to set-up alignments and leveling of equipment. Additional topics will include the use of test bar, squares, ball bar, force gauges, and backlash adjustments. (Prerequisites: MAIN 2330) (1 credit lecture/2 credits lab)

## **Communications**

### **COMM 1055 (MnTC 1, 2) Strengths and Wellness, 3 credits**

This course will introduce students to their unique talents, and help them discover how best to use and develop talents in academics, career, and life. Students will explore career paths, motivation, and personal strengths using the StrengthsFinder or StrengthsQuest tool, and learn to develop life skills using the Five Essential Elements of Well-Being. This course is designed to provide meaningful and relevant information to promote academic and life success. (Prerequisites: None) (MN Transfer Goal 1,2) (3 credits lecture/0 credits lab)

## **Computer Technology**

### **COMP 1002 Computer Technologies for Communication, 2 credits**

This course is designed for students with little or no computer experience. In this course students will learn how to use a variety of technologies to communicate with others. Included setting up and using e-mail accounts, word processing, presentation graphics, and spreadsheet development. Topics such as data privacy and the impact of information technology on society will be addressed. (Prerequisites: None) (2 credits lecture/0 credits lab)

## **Construction Electrician**

### **ELEC 1002 Electrical Theory I, 6 credits**

This course introduces the basic concepts of electricity. Included are a basic study of resistance, conductors and insulators, current and voltage sources, voltage drops, Ohm's Law, power, series circuit construction and analysis, parallel circuit construction and analysis, series-parallel circuit construction and analysis, magnetism, instrument usage, circuit theorems, and terminology. Lab time is included to prove and reinforce learned electrical concepts. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (4 credits lecture/2 credits lab)

### **ELEC 1021 Residential Wiring Lab I, 5 credits**

This course is designed to give students the practical application and installation experience needed to install electrical materials, apparatus, and circuits necessary and required in residential construction. All installations are based on the current edition of the National Electric Code (NEC) and local accepted wiring standards or practices. Hand tools will need to be purchased. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/3 credits lab)

### **ELEC 1031 National Electrical Code I, 3 credits**

This course focuses on the National Electrical Code (NEC) which is the basis for electrical installations, inspections, and license examinations. Introductions to the code, how the code book is constructed, who determines its contents, and how to use the code book when installing electrical circuits are covered in this course. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/1 credit lab)

### **ELEC 1062 Electrical Theory II, 6 credits**

This course continues to develop concepts of electricity and alternating current (AC) circuits. Included are studies of magnetic induction; single phase generation; resistance in single phase AC series, parallel, and combination circuits; capacitance in single phase AC series, parallel, and combination circuits; inductance in single phase AC series, parallel, and combination circuits; phase relationships; power quality issues including power factor and harmonics; instrument usage and terminology. This course includes lab time to prove and reinforce learned electrical concepts. Lab time is included to prove and reinforce learned electrical concepts. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1002, MATH 1400 with a "C" or better grade) (4 credits lecture/2 credits lab)



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**ELEC 1081 Residential Wiring Lab II, 6 credits**

This hands-on lab course is designed to give students the practical application and installation experience needed to install electrical materials, apparatus, and circuits necessary and required in residential construction. All installations are based on the current edition of the National Electric Code (NEC) and local accepted wiring standards or practices. Proper usage of equipment, hand and power tools, and safety practices will be covered. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1021 and ELEC 1031) (2 credits lecture/4 credits lab)

**ELEC 1091 National Electrical Code II, 3 credits**

This course is a continuation of National Electric Code I with emphasis on the study of feeders, branch circuit and feeder calculations, services, overcurrent protection, and grounding. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1030) (3 credits lecture/1 credit lab)

**ELEC 1101 Power Limited, 2 credits**

This course covers the general procedures for installing and terminating voice, data, fire alarm, and signaling cables with a structured cabling approach. Emphasis will be placed on the various types and ratings of common low-voltage cable, as well as fiber optic cable used for non power-limited or power-limited circuits. National Electrical Code (NEC) articles that pertain to these areas will also be studied. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/0 credits lab)

**ELEC 1108 PLC's for Electricians, 3 credits**

This course introduces programming and operating Allen Bradley MicroLogix 1000 fixed controllers, with an introductory classroom/lab course presenting devices and circuit applications commonly found in the electrical industry. The Programmable Logic Controllers (PLC) will be programmed and operated using RSLogix programming software. PLC topics include timers, counters, sequencers, subroutines, start-stop-job stations, and other programmable operations used in basic applications. Students will also learn how to trouble shoot, save, document, and print out a hard copy of their programs. This course is a component of the Minnesota Department of Labor and Industry Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1062 and ELEC 2021, or equivalent.) (1 credit lecture/2 credits lab)

**ELEC 1110 Lighting, 2 credits**

This course covers lighting terminology and the principles of light and sight. It will cover incandescent, fluorescent, luminaires, and lamps. Luminaire installations and light distribution are covered as well as National Electrical Code (NEC) requirements for lighting and luminaires. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/0 credits lab)

**ELEC 1122 Electrical Heating and Air Conditioning, 3 credits**

This course covers the principals and terminology of heating and cooling systems found in residential and commercial buildings. It also will cover control systems and schematic diagrams for heating and cooling. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1021) (1 credit lecture/2 credits lab)

**ELEC 1130 Plan Reading, 2 credits**

This course covers the basic analysis of construction methods and design. Included are the studies of interpreting prints, specifications and construction materials. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/0 credits lab)

**ELEC 1142 Safety Principles/OSHA, 2 credits**

This course covers Occupational Safety and Health Administration (OSHA) practices that are common to labor industries and presents information on how to develop a personal strategy to help avoid unsafe practices. An overview of OSHA safety requirements for general industry and construction sites will be presented. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: None) (2 credits lecture/0 credits lab))

**ELEC 2011 Commercial Wiring Lab I, 5 credits**

This course is designed to give the students some practical application and practice of wiring installations normally found in commercial buildings. This course is taught in conjunction with ELEC 2031 National Electrical Code (NEC) III. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1091; Co-requisites: ELEC 2031) (2 credits lecture/3 credits lab)

**ELEC 2021 Motors & Controls, 2 credits**

This course is designed to provide an introductory study of the fundamental theory and operation of electric motors, motor controllers, and motor control circuits. The course will include study of mechanical limit switches, relays, magnetic motor starters, motor overloads, symbols, and control ladder diagrams. Motor and motor starter installation, wiring, motor connections, and troubleshooting will also be covered for the common motor control circuits. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1062 and ELEC 1091) (1 credit lecture/1 credit lab)

**ELEC 2031 National Electrical Code III , 3 credits**

This course is a continuation of ELEC 1091 National Electrical Code II with an emphasis on grounding electrical services and equipment, bonding services and equipment, overcurrent protective devices, and wiring methods for commercial buildings. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisite: 1091) (1 credit lecture/2 credits lab)

**ELEC 2041 Three-Phase Electrical Theory, 5 credits**

This is a continuation of ELEC 1062 providing a review of single-phase circuits and a study of delta and wye poly-phase circuits, concepts of single and three phase transformer operation, connections, calculations, installation, and maintenance procedures. Lab time is included to prove and reinforce learned electrical concepts. This course is a component of the Minnesota Department of Labor and Industry Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 1062) (2 credits lecture/3 credits lab)



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### **ELEC 2061 Commercial Wiring Lab II, 5 credits**

This course is a continuation of ELEC 2011 Commercial Wiring Lab I and is designed to give students exposure and practice with methods used in commercial and industrial wiring. Students will be required to perform the tasks listed in the major content area according to industry and National Electrical Code (NEC) standards. This course is a component of the Minnesota Department of Labor and Industry Electrical ACT Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 2011; Co-requisites: ELEC 2081) (2 credits lecture/3 credits lab)

### **ELEC 2072 Motors and Controls II, 3 credits**

This Motors and Controls course is a continuation of ELEC 2021 Motors and Controls I, and is intended to develop a fundamental understanding of electric motor control methods and techniques common in the electrical industry. This course will include study of electronic controls, time delay sequence control, interlocking circuits, reduced voltage starting, and troubleshooting process controls. This course will also include the study of Variable Frequency Drive (VFD) fundamental installation and operation. This course is a component of the Minnesota Department of Labor and Industry Two-year Technical Program Experience Credit Rules. (Prerequisites: ELEC 2021 and ELEC 2041) (1 credit lecture/2 credits lab)

### **ELEC 2081 National Electrical Code IV, 3 credits**

This course is a continuation of ELEC 2031 National Electrical Code III and is a study of commercial and is a study of commercial and industrial wiring code applications. (Prerequisites: ELEC 2031) (2 credits lecture/1 credit lab)

## **Construction Estimating**

### **CEST 1000 Construction Estimating I, 3 credits**

The beginning responsibility of a construction estimator is preparing quantity takeoffs. This course will cover preparing quantity takeoffs for remodeling and new residential construction. The student will also be introduced to the use of cost guides. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **CEST 1010 Construction Estimating II, 3 credits**

This is continuation of CEST 1000 Construction Estimating I. This course will begin to focus on light commercial construction take off estimates. The student will continue to use cost guides and begin producing construction schedules. (Prerequisites: CEST 1000) (3 credits lecture/0 credits lab)

### **CEST 1020 Computer Estimating, 2 credits**

The use of computer estimating software will be important to the construction estimator. Students will be using the most current industry based computer estimating software. (Prerequisites: CEST 1000) (2 credits lecture/0 credits lab)

### **CEST 1030 Project Management for Estimators, 2 credits**

Project management is a necessary skill for the entry level construction estimator to advance in industry. The course will focus on scheduling and budgeting processes used during construction. The coordination and organization of necessary paperwork will also be emphasized. (Prerequisites: None) (2 credits lecture/0 credits lab)

## **Emergency Medical Services**

### **EMED 1076 BLS for the Health Care Provider, 1 credit**

This course includes First Aid and Cardiopulmonary Resuscitation (CPR) for the Adult, Child, and Infant. This course is taught with National Safety Council and current American Heart Association guidelines. Alternative CPR delivery models will be covered. This course fulfills the requirements for health care programs including Practical Nursing, Medical Assistant, as well as students in various other programs. Upon successful completion, participants will receive an American Heart Association Basic Life Support (BLS) for the Healthcare Provider card. (Prerequisites: None) (1 credit lecture/0 credits lab)

### **EMED 1113 Emergency Medical Technician 1, 4 credit**

Course content includes materials included in the most current Emergency Medical Services (EMS) Educational Standards appropriate for the Emergency Medical Technician (EMT) and utilizes more current principles as needed. The EMT course is an assessment-based education utilizing cognitive knowledge attained applied to real-life situations. The EMT course provides preparation in prehospital assessment and care for patients of all ages with a variety of medical conditions and traumatic injuries. Major topic areas covered include introduction to EMS, roles and responsibilities of an EMS provider, medical terminology, and pathophysiology of disease. In addition, patient assessment will be introduced. Upon successful completion of this course, students will be eligible to take Emergency Medical Technician- 2, and will be eligible to apply for certification as an Emergency Medical Responder (EMR) in Minnesota and will receive the American Heart Association-Basic Life Support. (Prerequisite: None; Co-requisites: EMED 1114) (3 credits lecture/1 credit lab)

### **EMED 1114 Emergency Medical Technician 2, 5 credit**

Course content materials include the most current Emergency Medical Services (EMS) Educational Standards appropriate for the Emergency Medical Technician (EMT) and utilizes more current principles as needed. The EMT course is an assessment-based education utilizing cognitive knowledge attained applied to real-life situations. The EMT course provides preparation in prehospital assessment and care for patients of all ages with a variety of medical and trauma assessment, understanding the kinematics of trauma, functioning in a multiple casualty event, and working with special populations. Upon successful completion of this course, students will be eligible to take the National Registry of Emergency Medical Technician (NREMT)- EMT Basic psychomotor and cognitive exams. (Prerequisites: None; Co-requisites: EMED 1113) (3 credits lecture/2 credits lab)

### **EMED 1500 Operations/Trauma, 4 credits**

This is an introductory course for the Paramedicine student reflective of the current National EMS Education Standards. This course will enable the student to advance their knowledge base from the EMT-B education to the advanced role of the paramedic in topics such as medical-legal issues, roles and responsibilities, communication, personal wellness and the etiology of trauma. (Prerequisites: Admittance into the paramedic program; Co-requisites: EMED 1505, EMED 1510, and EMED 1515) (4 credits lecture/0 credits lab)

### **EMED 1505 Paramedic Skills I, 3 credits**

This skills-based course prepares students to meet the current National EMS Educational Standards. Included in this course are the core skills of the basic EMS provider which then expand to the advanced skills of the paramedic. Students will apply fundamental skills in patient



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care including intravenous and intraosseous (IV/IO) therapy, basic and advanced airway management, advanced patient assessment/physical exam. (Prerequisites: Admittance into Paramedic program; Corequisites: EMED 1500, EMED 1510, and EMED 1515) (0 credits lecture/3 credits lab)

#### **EMED 1510 Trauma Provider Course , 1 credit**

Standardized course in trauma management of patients of all ages that sustain a traumatic event. Both basic and advanced recognition and treatment of the trauma patient will be covered. Upon successful completion, the student will receive a certification in trauma management. (Prerequisites: Admittance into Paramedic program; Co-requisites: EMED 1500, EMED 1505, and EMED 1515) (1 credit lecture/0 credits lab)

#### **EMED 1515 Ambulance Clinical I, 1 credit**

This course provides the student with no prior ambulance experience access into the emergency medical services (EMS) system. Course focuses on familiarity of how to work in an ambulance environment. (Prerequisites: Admittance into the Paramedic program; Co-requisites: EMED 1500, EMED 1505, and EMED 1510) (0 credits lecture/0 credits lab/1 credit OJT)

#### **EMED 1600 Cardiology/Pulmonology , 4 credits**

This class introduces students to cardiac and respiratory emergencies. It covers the identification and treatment of cardiac arrhythmias and respiratory conditions. The course offers students the opportunity to interpret electrocardiograms (ECG) and use medication to support assessment and treatment of cardiac and respiratory conditions. (Prerequisites: EMED 1500, EMED 1505, EMED 1510, and EMED 1515- with a grade of a "C" or better; Co-requisites: EMED 1605, EMED 1610, and EMED 1615) (4 credits lecture/0 credits lab)

#### **EMED 1605 Paramedic Skills II , 3 credits**

This course offers students the opportunity to apply the concepts of cardiac arrhythmias and respiratory conditions. Students will evaluate and treat simulated patients, demonstrating competency of electrocardiograms (ECG), pharmacological, and advanced respiratory treatment principles. Students will integrate treatment plans for a patient suffering from acute coronary syndromes, and/or respiratory emergencies. (Prerequisites: EMED 1500, EMED 1505, EMED 1510, and EMED 1515- with a grade of a "C" or better; Co-requisites: EMED 1600, EMED 1610, and EMED 1615) (0 credits lecture/3 credits lab)

#### **EMED 1610 Pharmacology for Paramedics, 2 credits**

This course covers the pharmacology portion of the National Emergency Medical Services (EMS) Education Standards. Students learn pharmacological concepts, drugs legislation and drug categories. Emphasis is placed on commonly used medication in the emergency setting and their effects on body systems. Students apply pathophysiologic principles of pharmacology to assessment findings to formulate a field impression and implement a pharmacologic management plan. This course will also provide the student with a basic understanding of pharmacology necessary for safe drug administration. (Prerequisites: EMED 1500, EMED 1505, EMED 1510, and EMED 1515- with a grade of "C" or better and MATH 0801- with a grade of "C" or better or appropriate test score; Co-requisites: EMED 1600, EMED 1605, and EMED 1615) (2 credits lecture/0 credits lab)

#### **EMED 1615 Advanced Cardiac Life Support (ACLS) 1 credit**

This standardized course approved by the American Heart Association (AHA) in the advanced level of care of a patient suffering from acute coronary syndromes and cerebral vascular accidents. This course focuses on assessment, management, and appropriate pharmacological interventions. (Prerequisites: EMED 1500, EMED 1505, EMED 1510, and EMED 1515- with a grade of "C" or better; Co-requisites: EMED 1600, EMED 1605, and EMED 1610) (1 credit lecture/0 credits lab)

#### **EMED 1700 Ambulance Clinical II (ACLS), 2 credits**

This is a clinical course in which students are assigned to preceptors on an Advance Life Support (ALS) ambulance. This course focuses developing and mastering ALS skills; communicating with patients, families, and other health care providers; and patient assessment skills. (Prerequisites: EMED 1600, EMED 1605, EMED 1610, and EMED 1615- with a grade of "C" or better; Co-requisites: EMED 1705 and EMED 1710) (0 credits lecture/0 credits lab/2 credits OJT)

#### **EMED 1705 Hospital Clinical I, 2 credits**

This course is focused on exposing students to a wide variety of medical patients, including medical and cardiac intensive care patients. Students will be introduced to multiple hospital setting, such as medical/cardiac intensive care units, emergency departments (ED) and operating rooms (OR). (Prerequisites: EMED 1600, EMED 1605, EMED 1610, and EMED 1615- with grade of "C" or better; Co-requisites: EMED 1700 and EMED 1710) (0 credits lecture/0 credits lab/2 credits OJT)

#### **EMED 1710 Support Services Clinical, 2 credits**

This course is focused on exposing students to patients in a wide variety of specialty care centers, such as oncology, mental health, dialysis centers, and telemetry units. Students will work beside staff on assessing and caring for patients in those specialty centers. (Prerequisites: EMED 1600, EMED 1605, EMED 1610, and EMED 1615- with a grade of "C" or better; Co-requisites: EMED 1700 and EMED 1705) (0 credits lecture/0 credits lab/2 credits OJT)

#### **EMED 2500 Medical Emergencies and Special Populations, 4 credits**

This primarily lecture course focuses on the pathophysiology, signs and symptoms, and treatments with patients suffering from neurological, hematological, intestinal, behavioral, renal, genitourinary, and reproductive emergencies. Course also covers assessment and treatment of pediatric, geriatric, and cognitively impaired patients. (Prerequisites: EMED 1700, EMED 1705, and EMED 1710- with a grade of "C" or better; Co-requisites: EMED 2505 and EMED 2510) (4 credits lecture/0 credits lab)

#### **EMED 2505 Paramedic Skills III, 2 credits**

This primarily lecture course focuses on the pathophysiology, signs and This is a laboratory cohort to Medical Emergencies and Special Populations (EMED 2500) that focuses on the development and implementation of treatment plans to appropriately treat a patient suffering from a myriad medical conditions. Patients of special population such as pediatric, geriatric, and cognitively impaired patients will also be covered. (Prerequisites: EMED 1700, EMED 1705, and EMED 1710- with a grade of "C" or better; Co-requisites: EMED 2500 and EMED 2510) (0 credits lecture/2 credits lab)



**EMED 2510 Emergency Department Clinical, 2 credits**

This clinical course allows the student to utilize all of the knowledge and skills learned to this point in the paramedic program to provide and assist in patient care in the emergency department (ED) setting. The student will provide patient care under the direct supervision of a registered Nurse and/or Physician. Provides exposure to the operations of an emergency department (ED) environment. (Prerequisites: EMED 1700, EMED 1705, and EMED 1710- with a grade of "C" or better; Co-requisites: EMED 2500 and EMED 2505) (0 credits lecture/0 credits lab/2 credits OJT)

**EMED 2600 Ambulance Clinical III, 7 credits**

This field experience course covers that application of advanced level skills and knowledge in the evaluation and care of the sick and injured patient. The student will be involved in practicing out-of-hospital medicine as a team member and a team leader under the direct supervision of a staff paramedic. (Prerequisites: EMED 2500, EMED 2505, and EMED 2510- with a grade of "C" or better; Co-requisites: EMED 2605, EMED 2610, EMED 2615, and EMED 2620) (0 credits lecture/0 credits lab/7 credits OJT)

**EMED 2605 Pediatric Provider Course, 1 credit**

This is a standardized course (either Pediatric Advanced Life Support Provider-PALS or Prehospital Emergency Pediatric Provider-PEPP) covering the care and treatment of the pediatric patient suffering from an emergent medical or trauma situation. Focuses on specific differences between pediatric and adult patients and how to appropriately treat pediatric patients. (Prerequisites: EMED 2500, EMED 2505, and EMED 2510- with a grade of "C" or better; Co-requisites: EMED 2600, EMED 2610, EMED 2615, and EMED 2620) (1 credit lecture/0 credits lab)

**EMED 2610 Hospital Clinical II, 2 credits**

This clinical course will allow students will attend obstetrical and gynecological (OB/GYN) and pediatric hospital rotations to gain an understanding to the delivery of a newborn and assessment and treatment of a neonatal patient and care for the mother. (Prerequisites: EMED 2500, EMED 2505, and EMED 2510- with a grade of "C" or better; Co-requisites: EMED 2600, EMED 2605, EMED 2615, and EMED 2620) (0 credits lecture/0 credits lab/2 credits OJT)

**EMED 2615 Airway Clinical, 1 credit**

This clinical will allow students to perform, under the direction of a Health Care Provider, advanced airway intervention in the operating room (OR) and/or cadaver lab. This course will include a session with a physician in a cadaver lab. (Prerequisites: EMED 2500, EMED 2505, and EMED 2510- with a grade of "C" or better; Co-requisites: EMED 2600, EMED 2605, EMED 2610, and EMED 2620) (0 credits lecture/0 credits lab/ 1 credit OJT)

**EMED 2620 EMS Program Summative, 1 credit**

This is a capstone course that focuses on demonstration and application of all material learned within the Paramedic program. This course also includes end of program preparation activities such as program cognitive and psychomotor summative examinations. (Prerequisites: EMED 2500, EMED 2505, and EMED 2510- with a grade of "C" or better; Co-requisites: EMED 2600, EMED 2605, EMED 2610, and EMED 2615) (0 credits lecture/1 credit lab)

**ENGL 0102 Fundamentals of English, 4 credits**

This course offers the opportunity to study and review English grammar and punctuation; develop fluency; organize ideas; and write paragraphs and short essays, as well as edit for grammar, punctuation, and spelling. The course will introduce the practice of composition as a process of writing and revising, rather than as a one-time act. Revision exercises will allow students the chance to demonstrate improvement after receiving specific instructor and peer feedback. The activities in this class will include grammar instruction; workbook and online editing exercises to practice grammar skills; class discussions of topics; and exercises to assist in determining a thesis for an essay, organizing a first draft, developing support for the main idea, composing an essay, writing in rhetorical modes, proofreading, and using basic citation skills. This course will emphasize creating formatted documents using the appropriate software and to interacting with the instructor and peers via the colleges online learning platform. (Prerequisites: A score of 40 on the Accuplacer Reading Comprehension.) (4 credits lecture/0 credits lab)

**ENGL 0960 Preparing for College Writing, 2 credits**

This course focuses on the writing skills necessary to succeed in college writing. Students will employ the writing process to generate thesis-focused, unified, multi-paragraph essays. Student will develop and organize ideas into coherent paragraphs with identifiable topic sentences and support their claims with correctly cited evidence. Students will respond to assigned reading and their peers' work, as well as apply editing skills to craft effective grammatical sentences.

A grade of C or higher in this course is required to register for ENGL 1107: Composition, ENGL 1110: Research Project, or ENGL 2105: Business and Technical Writing. (Prerequisites: NextGen Accuplacer Reading score of 240-249. Co-requisites: This course must be taken concurrently with READ 0960. Students may take this course without READ 0960 with instructor permission.) (2 credits lecture/0 credits lab)

**ENGL 1107 (MnTC 1, 2) Composition I, 4 credits**

This introductory course focused on academic writing assignments that involve critical reading, thinking, listening, and writing for a variety of rhetorical purposes and audiences. Students will learn how to develop their ideas; organize rough drafts; respond to peer and instructor feedback; and revise and edit their essays. Students will compile a viable job search portfolio. Each student will also develop a research paper, with sources properly cited in a standard citation format, through a process of discovering, analyzing, and synthesizing information drawn from both print and electronic sources. (Prerequisites: ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test scores. Must pass classes with a C or better.) (MN Transfer Goals 1, 2) (4 credits lecture/0 credits lab)

**ENGL 1110 (MnTC 1) Special Topics: Research Project, 1 credit**

This course is designed for students who have previously taken a 3-credit freshman-level course at an accredited college. It assumes that the student is already able to compose an essay and understands the basics of writing, including using prewriting strategies; writing a thesis statement; organizing and developing the introduction, body, and conclusion of an essay; and using the writing conventions with accuracy. This course will specifically focus on the research paper. In doing so, it will emphasize communication skills, including proper employment of APA citation format to document sources, and effective, ethical imple-

mentation of technical and information literacy skills. (Prerequisites: ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 with a C or better or appropriate test scores.) (MN Transfer Goal 1) (1 credit lecture/0 credits lab)

#### **ENGL 1150 (MnTC 2, 6, 7) Multicultural Literature, 4 credits**

This course introduces students to important literary contributions of writers from a variety of ethnic and cultural backgrounds, focusing on critical reading and discussion; the elements of literature; and analysis, interpretation and evaluation, in minority and immigrant literature of the United States. Coursework will include short essays, peer-review work, and a longer researched essay using MLA citation format. Students will first write about their own cultural heritage, and then study several significant and representative multicultural works. This course will explore the global origins of people who make up United States society; the problems and possibilities facing groups based on race, religion, gender, ethnicity, national origin, and social class; and the strategies, struggles, and ingenuity of those who have brought about change. (Prerequisites: None) (MN Transfer Goals 2, 6, and 7) (4 credits lecture/0 credits lab)

#### **ENGL 2105 (MnTC 1, 2) Business and Technical Writing, 4 credits**

English 2105 is a course designed to help students communicate effectively in the technology-supported writing environment of the 21st-century workplace. The course teaches the rhetorical principles that help students shape their business writing ethically, for multiple and multicultural audiences, in a variety of professional situations. Students will produce effective business letters, emails, memos, researched reports, web sites and collaborative projects in professional contexts. Students will analyze a variety of communication situations and design appropriate responses through tasks that involve problem solving, rhetorical theory, document design, oral presentations, writing teams, and audience awareness. (Prerequisites: ENGL 0102 or ENGL 0960 and READ 0900 or READ 0960 or appropriate test scores. Must pass classes with a C or better.) (MN Transfer Goals 1, 2) (4 credits lecture/0 credits lab)

#### **ENGL 2110 (MnTC 6 & 10) Literature and the Environment, 3 credits**

This college literature course offers students the opportunity to analyze texts that explore the relationship between humans and their environments. Possible topics include ecocriticism, sustainability, urban nature, the role of the natural world in literary imagination, and ecoliteracy, and texts may include works of nonfiction, fiction, poetry, and popular culture. This course will provide experience with critical thinking and literary analysis as students examine perspectives, integrate evidence, and articulate responses through discussions, writings, and other activities. Students will be expected to read and write at the college level. (Prerequisites: None) (MN Transfer Goals 6, 10) (4 credits lecture/0 credits lab)

### **Electronic Engineering Technology**

#### **EETC 1102 DC Mechatronics 1 DC, 3 credits**

This course will cover electronic principles and passive components. Students will apply Direct Current (DC) concepts in lab, construct circuits, and gain experience with measuring equipment. Course concepts will be applied to troubleshooting mechatronic systems. The lab will emphasize electronic component identification, electronic schematic reading, circuit wiring, measurement, and documentation. (Prerequisites: None; Co-requisites: EETC 1141) (2 credits lecture/1 credit lab)

#### **EETC 1111 AC Electrical Theory and Lab, 5 credits**

The course will cover analyzing components in series, parallel, and series-parallel AC (Alternating Current) circuits, using meters, function generators, Oscilloscopes, Ohm's Law, Kirchoff's Laws, and troubleshooting concepts. The Lab emphasizes electronic component identification, schematic reading, circuit construction and testing, applying AC test and measuring equipment, as well as documentation.

Troubleshooting techniques are implemented in every lab. (Prerequisites: None; Co-requisites: EETC 1101) (3 credits lecture/2 credits lab)

#### **EETC 1113 Mechatronics 2 AC, 3 credits**

This course will cover Alternating Current (AC) electronic principles and passive components. Course concepts will be applied in troubleshooting mechatronic systems. Lab will emphasize AC signal measurement, electronic component characteristics, schematic reading, circuit construction, and documentation. (Prerequisites: None; Co-requisites: EETC 1102) (2 credits lecture/1 credit lab)

#### **EETC 1141 Circuit Analysis, 4 credits**

This course covers measuring systems, units, methods, and tools for analyzing electronic circuits. Electronic laws and theorems will be applied in calculating circuit estimates. Component documentation, schematics, and analysis methods such as spreadsheets and circuit simulation will be applied throughout this course. (Prerequisites: None; Co-requisites: EETC 1102) (4 credits lecture/0 credits lab)

#### **EETC 1151 Computer Troubleshooting A+, 3 credits**

This course covers the analysis and troubleshooting skills required to maintain personal, industrial, and embedded computers. The A+ Certification Exam curriculum, a recognized industry standard for computer technicians, will be introduced. Course lab activities cover the application of computer hardware and operating systems. Each student will build a computer, which they will keep upon completion of the program. (Prerequisites: None) (2 credits lecture/1 credit lab)

#### **EETC 1170 Programmable Logic Controllers, 2 credits**

A Programmable Logic Controller (PLC) is a device used widely in industrial automation to control anything from a small self-contained water filter system up to an entire factory production line. This course introduces applying PLCs in automated systems. This course covers the fundamental ladder logic programming using Allen Bradley software and controllers. The increasingly popular international standard IEC programming languages will be introduced, as well as PLCs from other manufacturers. The basics of automation safety, steps in designing and documenting PLC programs, as well as troubleshooting will be covered. This class emphasizes hands on lab work. (Prerequisites: EETC1250) (2 credits lecture/0 credits lab)

#### **EETC 1202 Solid State Electronic Devices, 5 credits**

Solid State Electronic Devices cover both discrete devices, as well as integrated circuits. This course introduces fundamentals of solid state electronic device operation and circuit applications, applying them to constructing and troubleshooting circuits in lab. The lab component emphasizes device identification, circuit wiring and testing, test equipment use, and documentation. Both switching and linear modes of solid state electronic device operation will be explored. Troubleshooting techniques are implemented throughout the course. (Prerequisites: EETC 1113) (4 credits lecture/1 credit lab)



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**ETEC 1250 Digital I, 3 credits**

This course provides an introduction to digital electronics. The emphasis is on the operation, application, and troubleshooting of logic gates. This course also covers Boolean algebra, number system conversion, combinational and sequential logic. Troubleshooting digital circuits is emphasized throughout the course. (Prerequisites: None) (2 credits lecture/1 credit lab)

**ETEC 1260 Lasers & Optics, 2 credits**

This course introduces laser and optics fundamentals. Optical components and systems are covered, as well as lasers and their industrial applications. This course will emphasize the importance of laser safety, optical alignment, and beam calibration. (Prerequisites: ETEC 1102) (2 credits lecture/0 credits lab)

**ETEC 1271 Technical Documentation, 3 credits**

This course covers technical documentation including writing lab reports, writing operation and service manuals, project cost estimating, project proposals, and media research. Course projects will include writing a small technical manual, documenting circuit operations, and creating project proposals. (Prerequisites: ETEC 1113) (3 credits lecture/0 credits lab)

**ETEC 1281 Engineering Technology Programming: LabVIEW & C++, 2 credits**

This course will introduce the fundamentals of software development and apply this knowledge to LabVIEW and C++ programming. (Prerequisites: ETEC 1102) (2 credits lecture/0 credits lab)

**ETEC 2011 Machine-to-Machine Wireless Communications, 2 credits**

This course covers principles of wireless communication and technology used in Machine-to-Machine communications (M2M). The electromagnetic spectrum, communication bands, communications systems and circuits, antennas and transmission lines, modulation, noise, and technology used for interconnecting automated systems will be explored. (Prerequisite: ETEC 1201) (2 credits lecture/0 credits lab)

**ETEC 2138 LabVIEW and Data Acquisition, 4 credits**

This course will cover intermediate topics of LabVIEW programming. The learner will create applications to acquire, process, and display real-world data. Programs to monitor temperature and interface software with Data Acquisition (DAQ) hardware will be addressed. (Prerequisite: ETEC 1281) (4 credits lecture/0 credits lab)

**ETEC 2143 Advanced Programmable Logic Controllers (PLCs), 3 credits**

This course covers advanced skills applying Programmable Logic Controllers (PLCs) in automated systems. Advanced ladder logic programming will be covered, and the International Electrotechnical Commission (IEC) 61131 standard programming languages will be introduced. Automation safety and the process of designing PLC programs will be emphasized. (Prerequisites: ETEC 1170) (2 credits lecture/1 credit lab)

**ETEC 2162 Robotics and Automation Controls, 5 credits**

This course covers fundamentals of robotic concepts and applications. Topics include experimenting with microcontrollers, sensors, teach pendants, and servos and stepper motors. Advanced troubleshooting techniques will be integrated throughout the course. (Prerequisites: ETEC 1102, ETEC 1281, ETEC 1170 and ETEC 1250) (4 credits lecture/1 credit lab)

**ETEC 2172 Mechatronic Capstone Project, 5 credits**

In this course, students will create a mechatronics project which requires interfacing software and hardware. The course emphasizes the concept of teamwork, placing students in groups to complete the project. Projects will be presented to the Electronic Engineering Technology Advisory Committee. (Prerequisite: ETEC 2162 and ETEC 2138; Co-requisite: ETEC 2177) (1 credit lecture/4 credits lab)

**ETEC 2177 Mechatronic Capstone Design and Documentation, 2 credits**

The goal of this course is for designing and documenting the capstone project. Additional goals include creating a project management spreadsheet incorporating the six steps of problem-solving, and presenting the design and documentation at the end of the course to the Electronics Advisory Committee. (Prerequisites: ETEC 2162 and ETEC 2138; Co-requisites: ETEC 2172) (2 credits lecture/0 credits lab)

**ETEC 2276 Industrial Networking IOT/M2M, 4 credits**

This course covers networking technology for the industrial Internet of Things (IOT) and Machine-to-Machine (M2M) communications. Industrial IOT capable devices, such as Programmable Logic Controllers (PLCs) will be networked with systems for programming, monitoring, data collection, and Human Machine Interface (HMI). The course also covers configuring M2M network devices, network documentation, and troubleshooting industrial networks. (Prerequisites: BMET 1301 and ETEC 1170) (3 credits lecture/1 credit lab)

### Health Information Technology

**HITM 1030 Medical Coding for Scribing, 3 credits**

This course is an introduction and overview of medical diagnosis and procedure coding. This course will focus on rules and conventions of coding as well as the chapter-specific guidelines for assignment of principal and additional diagnoses in both inpatient and outpatient settings. The purpose of this course is to provide the medical scribe with an understanding of and familiarity with the requirements of medical coding as used within the electronic health record. (Prerequisites: None) (3 credits lecture/0 credits lab)

**HITM 1110 Medical Terminology in Health Information, 3 credits**

This course is designed to combine the terminology for medications prescribed and for common disease conditions, according to the American Health Information Management Association (AHIMA). Content includes spelling and usage of word roots, suffixes, prefixes, word analysis, and abbreviations common to the health information professional. This course will also include drug terminology, pharmaceutical names, drug classifications and the medical uses of medications per body system. (Prerequisites: None) (3 credits lecture/0 credits lab)

**HITM 1111 Pharmacology for Health Information, 1 credits**

This course is designed to complement the terminology for medications prescribed for common disease conditions, according to the American Health Information Management Association (AHIMA). Content includes drug terminology, pharmacology names, drug classifications, and the medical uses of medications. (Prerequisites: None) (1 credit lecture/0 credits lab)



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**HITM 1120 Health Information Technology Practicum I, 3 credits**

This is the first of two Health Information Technology (HIT) professional practice experiences. It is designed to provide exposure to practical general training and experiences in health care delivery systems. Topics include basic organization/management of health information in various types of health care organizations and managed care organizations; uses and structure of clinical vocabulary systems; and the impact of external forces on the healthcare industry. The course will offer application activities which reinforce concepts introduced in the classroom and at site visits. This course also includes a career research report and the completion of several review guide exams. (Prerequisites: HITM 1221) (3 credits lecture/0 credits lab)

**HITM 1130 ICD-10-CM Coding, 3 credits**

This course is an introduction to the International Classification of Diseases, 10th edition, Clinical Modification (ICD-10-CM). The course will emphasize correct diagnosis coding, utilizing the alphabetic index and tabular listing within the current ICD-10-CM codebook. The course will focus on rules and conventions of ICD-10-CM as well as the chapter-specific guidelines for assignment of principal and additional diagnoses in both inpatient and outpatient settings. (Prerequisites: None) (2 credits lecture/1 credit lab)

**HITM 1200 Billing and Reimbursement, 2 credits**

This course provides an introduction to medical claim form preparation and processing. Topics covered in this course will include: Commercial, managed care and federal insurance plans; the reimbursement systems and prospective payment systems (PPS) used in the healthcare industry; billing processes and procedures; clean claims and denial; the National Correct Coding Initiatives (NCCI); chargemaster maintenance; regulatory guidelines; and reimbursement monitoring and reporting. (Prerequisites: HITM 1221) (2 credits lecture/0 credits lab)

**HITM 1210 Supervision of Health Information, 3 credits**

This course is an introduction to the principles of supervision, communication, and relationships in the management of health information services. Topics covered in this course include leadership, motivation, ergonomics, management concepts, project management concepts, teamwork-building, laws affecting the workforce, and financial management of a department. (Prerequisites: HITM 1221 and HITM 1244) (3 credits lecture/0 credits lab)

**HITM 1221 Introduction to Health Information Management, 3 credits**

This course provides an orientation to the health care delivery system, health records, and the health information profession. The American Health Information Management Association's (AHIMA) educational requirements and code of ethics are also introduced. (Prerequisites: None) (3 credits lecture/0 credits lab)

**HITM 1230 ICD-10-PCS Coding, 3 credits**

This course is an introduction to the International Classification of Diseases, 10th edition, Procedure Classification System (ICD-10-PCS). The course will emphasize correct hospital inpatient procedure coding, utilizing the alphabetic index and tabular listing within the current ICD-10-PCS codebook. The course will focus on rules and conventions of ICD-10-PCS, use of the tables within the index of the codebook, as well as specific guidelines for assignment of principal and additional procedure codes in hospital inpatient settings. (Prerequisites: None) (2 credits lecture/1 credit lab)

**HITM 1240 CPT Coding, 3 credits**

This course introduces the student to classifying procedures and outpatient procedures using the Center of Medicare and Medicaid Services' (CMS) Coding System, with the main focus on Current Procedural Terminology (CPT). The focus is on applying CPT guidelines and principles. Issues relating to reimbursement will also be addressed. (Prerequisites: HITM 1130 and HITM 1230) (2 credits lecture/1 credit lab)

**HITM 1244 Law and Ethics, 2 credits**

This course will focus on the application of ethical and legal principles and standards pertaining to health information management. Topics of study will include: the application of ethical principles; legal issues pertaining to the confidentiality aspect of health information management; regulatory agencies and laws; privacy standards and rules; and the Health Insurance Portability and Accountability Act (HIPAA) in relationship to health information use and disclosure, and legal aspects of the health record, including documentation/retention requirements from various organizations. (Prerequisites: None) (2 credits lecture/0 credits lab)

**HITM 1250 Advanced Coding, 2 credits**

This course give additional experience using the principles of the International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM); International Classification of Diseases, 10th revision, Procedure Coding System (ICD-10-PCS); and Current Procedural Terminology (CPT) coding to ensure proficiency using patient records and advanced concepts of medical coding. The course adheres to current regulations and established guidelines in assigning medical code designations. Electronic applications and work processes to support clinical classification and medical coding will be emphasized in this course. (Prerequisites: HITM 1240) (1 credit lecture/1 credit lab)

**HITM 1260 Professional Practice for Coding Specialists, 3 credits**

This is an advanced level course providing the student with more hands-on experience with coding from medical records at various health care facilities. Students will be required to travel to various health care facilities within the Metro area. (Prerequisites: HITM 1130, HITM 1230, and HITM 1240) (2 credits lecture/1 credit lab)

**HITM 1325 Quality and Performance Improvement, 3 credits**

This course focuses on the theory, practice and management of performance and quality improvement processes in healthcare organizations. Topics include: performance improvement activities and tools; customer satisfaction; case management; infectious disease control; risk management; quality and safety of patient care; human resources; analysis of performance improvement data; performance improvement tools; change management; and the accreditation, certification and licensure process. (Prerequisites: HITM 1221) (2 credits lecture/1 credit lab)

**HITM 2000 Healthcare Information and Statistics, 3 credits**

This course focuses on managing health information in healthcare facilities that are not hospitals. Topics will cover licensure and regulatory agencies. An introduction to the basic components of the content, use, and structure of healthcare data and data sets are explored, including inferential statistics, sampling, hypothesis testing, probability and inference. The content of the health record, documentation requirements, healthcare data sets, registries and indices are introduced. (Prerequisites: HITM 1221, MATH 0801 or appropriate test score, and instructor approval) (3 credits lecture/0 credits lab)



**HITM 2240 Computerized Health Information, 3 credits**

This course will focus on current and emerging Health Information Technologies (HIT) topics including data collection, maintenance, retrieval and security. Students will be provided with hands-on exposure to technologies such as master patient indices, retrieval and tracking systems, automated chart deficiencies, voice recognition technologies, image-based storage systems, and project management concepts, all of which are parts of the Electronic Health Record (EHR). (Prerequisites: HITM 1221) (3 credits lecture/0 credits lab)

**HITM 2245 Health Care Statistics and Data Registries , 3 credits**

This course will focus on the managing and applying secondary records and databases for health information. Topics of study include relationship of content, use, and structure of health care data and data sets to secondary record systems; pertinent laws and regulations affecting registries; the compilation/interpretation of various description reports, such as charts, graphs, and tables/healthcare statistics; and the effective use, application, collection, arrangement, presentation, and verification of health care data. (Prerequisites: ADSC 1171, HITM 2000, HITM 1221 and MATH 0801 or appropriate test score.) (3 credits lecture/0 credits lab)

**HITM 2261 HIT Professional Practice Experience II, 3 credits**

This course is designed to provide the advanced student with experience external to the college at a health care organization within the Healthcare field. Principles of health information technology are applied through observation, participation, and application of a variety of health information technology functions. Working under the supervision of a qualified health information professional, the student achieves objectives developed and documented by the college that are directly related to the clinical site which the student is assigned. In addition, students will be guided through the process of preparing for the Registered Health Information Technology (RHIT) exam. The course will cover real-world case studies and practice tests, study tips, time management skills, and how to create a study plan after analyzing their current knowledge about the field. (Prerequisites: Successful completion of first three semesters of HIT program and instructor permission) (0 credits lecture/3 credits lab)

### Health/Nursing Assistant

**HLTH 1000 Disease Conditions, 2 credits**

This course provides basic information about common disease conditions affecting various body systems. Diagnostic tools and treatment options will be presented. In addition, students will learn the basic of medical terminology associated with the disease process. (Prerequisites: None) (2 credits lecture/0 credits lab)

**HLTH 1005 Anatomy & Physiology, 4 credits**

This course is a basic study of body structure and function. All body systems will be studied. A prior course in high school is recommended. (Prerequisites: None) (4 credits lecture/0 credits lab)

**HLTH 1040 Medical Terminology, 2 credits**

This course is designed to cover word analysis, spelling and usage of word, roots, suffixes, and abbreviations common to the medical profession. Emphasis will be placed on spelling and constructing medical terms. (Prerequisites: None) (2 credits lecture/0 credits lab)

**HLTH 1101 TMA- Trained Medication Aide , 3 credits**

This course is the state approved program. The legal requirements concerning medication administration, general information, and administration skills of oral, rectal, and topical routes will be discussed. The ten major body systems and how they are involved in the pharmacology of drug use will be studied. The students will not administer medications on clinical, but will be ready to demonstrate their skills to the employing agency. (Prerequisites: Nursing Assistant) (3 credits lecture/0 credits lab)

**HLTH 1103 Nursing Assistant/Home Health Aide, 5 credits**

This course introduces concepts of basic human needs, basic nursing and personal care skills, mental health and social needs, restorative services, residents' rights, and home health. The skills are performed in a supervised laboratory and long term care clinical setting. The course is the MN State approved curriculum and meets the requirements of the Minnesota Department of Health. Upon completion of the competency evaluation, students can be employed in either a long term care facility, hospital, or assisted living facility. Minnesota Department of Health: Reimbursable Expenses Nursing assistants who pay for the cost of their training and testing prior to employment are eligible for reimbursement. The nursing assistant has 1 year from completion of the test to turn in receipts requesting reimbursement. The facility has 90 days to reimburse the nursing assistant. If the nursing assistant does not remain employed as a nursing assistant for 90 days, the nursing home is under no obligation to reimburse the nursing assistant. The first nursing home the nursing assistant stays at for at least 90 days would then be responsible to reimburse the nursing assistant if it has been 1 year or less since completion of the test. Only certified nursing homes or boarding care homes are required to reimburse a nursing assistant. (Prerequisites: None) (3 credits lecture/2 credits lab)

**HLTH 1110 Introduction to ECGs, 1 credit**

This course introduces the process of attaining and interpreting electrocardiograms (ECG). Cardiac anatomy and physiology and the electrical conduction of the heart are introduced. Students will demonstrate proper placement of ECG's for 4 and 12 lead ECG's as well as to interpret cardiac rhythms. (Prerequisites: None) (0 credits lecture/1 credit lab)

### Interdisciplinary Studies

**INTS 1000 (MnTC 2) Critical Thinking Applications for College, 3 credits**

This course applies critical thinking to develop awareness of problem-solving skills while exploring higher-education processes. Students create an individualized education plan based on personal and professional goals they identify. The course presents opportunities to expand awareness of technology alternatives available for communicating ideas, interacting and collaborating with others, exploring information, and experimenting with new ideas during the college experience and in future careers. (Prerequisites: None) (MN Transfer Goal 2) (3 credits lecture/0 credits lab)

**INTS 1010 (MnTC 2) College and Career Success, 1 credits**

College and Career Success (INTS 1010) is a course designed to help students successfully develop and achieve academic and career goals. This course is designed to provide students with the necessary knowledge and support to assist them in navigating the college system, in establishing obtainable goals, and in practicing strategies to promote goal achievement. The course is designed to provide students with the



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experiences necessary to obtain knowledge of college terminology and the general functions of college services. By use of an experiential approach, this course will promote the active discovery and development of psychosocial skills which directly influence academic and career success, such as resilience, adaptability, emotional management, life balance, interpersonal collaboration, and self-confidence. (Prerequisites: None) (MN Transfer Goal 2) (1 credit lecture/0 credits lab)

### Information Technology Management

#### **ITEC 1003 Networking Fundamentals, 2 credits**

This course introduces the concepts of Networking. Material to be covered includes local and wide area networks, operating systems, and the hardware and software used to create networks. Emphasis will be placed on the customer service skills needed to support a network. (Prerequisites: None) (1 credit lecture/1 credit lab)

#### **ITEC 1011 Programming Logic & Design, 4 credits**

This course provides the beginning programmer with a guide to developing structured programming logic. Students are introduced to programming concepts, enforcing good style and logical thinking. Key points covered include: what structured programming is; the advantages of writing structured programs; modular programming; procedural code; decision making; looping; array manipulations; writing interactive programs; and object oriented programming. Hands-on programming exercises will be used to enhance the concepts introduced. No special knowledge of mathematics, accounting, or other business disciplines is required. (Prerequisites: None) (3 credits lecture/1 credit lab)

#### **ITEC 1016 Web Development Technologies, 4 credits**

This course will cover designing and developing dynamic web sites using Hyper Text Markup Language (HTML5) and Cascading Style Sheets (CSS3). Emphasis is placed on the design, development, deployment, and maintenance of interactive web sites. Creating a complete set of documentation and evaluating good web site design is covered. (Prerequisite: None) (3 credits lecture/1 credit lab)

#### **ITEC 1025 Project Management, 4 credits**

This course provides a comprehensive overview of project management. The course focuses on an understanding of concepts and fundamental practices/techniques used in effective project management. Course instruction is enhanced through hands-on labs, a final team project and exercises. (Prerequisites: None) (3 credits lecture/1 credit lab)

#### **ITEC 1035 Documentation Standards, 2 credits**

This course covers creating usable technical documentation with an emphasis of effective communication, content, standards and styles, identifying target audiences, and research. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **ITEC 1070 IT Support, 1 credits**

The course involves the study of Information Technology (IT) support and customer-interaction job skills. IT support strives to deliver high-quality technical customer support and customer-interaction skills including listening, responding, telephone skills, teamwork, solving and preventing incidents, and conflict resolution. The course will also cover how to apply these skills when dealing with co-workers, customers, and vendors. (Prerequisites: None) (1 credit lecture/0 credits lab)

#### **ITEC 2105 JAVA Programming, 4 credits**

This course introduces students to object-oriented programming (OOP) concepts along with the Java programming language syntax to implement these concepts. The course emphasizes a hands-on approach with the students building Java programs that incorporate OOP concepts such as: Objects, Classes, Methods, Decision Making, Inheritance, and Graphical User Interface (GUI) design. (Prerequisites: ITEC 2100 or instructor approval) (3 credits lecture/1 credit lab)

#### **ITEC 2120 Database Design & SQL, 4 credits**

This course is designed to provide individuals to build a database application. Students will create the logical and physical database design. They will create tables, queries, forms and reports while implementing proper design methodologies. Students will use SQL to create a simple query, join multiple tables, perform unions, simple totals, grouping data, inserting data, updating data and deleting data. Course instruction is enhanced through hands-on labs, projects, and exercises. (Prerequisites: TLIT 1005 or instructor approval) (3 credits lecture/1 credit lab)

#### **ITEC 2121 SQL and Database Design, 4 credits**

This course is designed to provide instruction in designing and querying a database using Structured Query Language (SQL). Students will create logical and physical database designs. They will create tables and queries, while implementing proper design methodologies. Students will use SQL to create a simple query, join multiple tables, perform unions, simple totals, grouping data, inserting data, updating data, and deleting data. Course instruction is enhanced through hands-on labs and exercises. (Prerequisites: None) (3 credits lecture/1 credit lab)

#### **ITEC 2122 Advanced SQL, 4 credits**

This course builds upon concepts introduced in the prerequisite course. It teaches students techniques to develop and optimize complex queries which can involve joins and subqueries nested at many levels. Advanced Structured Query Language (SQL) commands will be utilized, including more SQL syntax used to manipulate and prepare data for use. Students will also learn to create user-defined functions and stored procedures. (Prerequisites: ITEC 2121 or ITEC 2120) (3 credit lecture/1 credit lab)

#### **ITEC 2140 Business Intelligence, 4 credits**

This course will provide an introduction to performance measurement tools designed to capture relevant data from all segments of an organization. It will include topics of planning and organizing data into a coherent structure and output that can be used for strategic decision processes. Hands-on labs will be used to enhance student learning. (Prerequisites: TLIT 1005) (3 credits lecture/1 credit lab)

#### **ITEC 2145 Database Programming, 4 credits**

This course teaches students how to create and execute server-side database programming. It builds upon concepts introduced in the Database Design and SQL course. Advanced topics include creating and writing stored procedure, functions, and triggers. (Prerequisites: ITEC 2120 or Instructor approval) (3 credits lecture/1 credit lab)

#### **ITEC 2150 Advanced Business Intelligence, 3 credits**

In-depth learning of advanced Business Intelligence knowledge and techniques are addressed in this course. (Prerequisite: ITEC 2140) (2 credits lecture/1 credit lab)



**ITEC 2207 Windows Server Administration, 4 credits**

This course will cover the installation and configuration of a Windows Server network operating system in a network environment. Students will construct PowerShell scripts and become familiar with command structure. (Prerequisites: ITEC 1002 or ITEC 1003) (3 credits lecture/1 credit lab)

**ITEC 2215 Linux/Web Server Administration, 4 credits**

This course introduces the fundamentals of the Linux operating system using. Students will learn the basics of the Linux file systems and editors. Linux file processing, administrative commands and utilities, and creating scripts are also covered. In addition, this course provides a foundation for administering, securing and maintaining a Web Server. Skills that will be taught in this course include: building a Web site; basics of networks, web servers, and web clients; configuration and maintenance of your web site; server side includes; and secure online transactions. Students will be provided hands-on practice of many of the principals using the latest Web server software. (Prerequisites: ITEC 1002 or ITEC 1003 or TLIT 1005, or Instructor Approval) (3 credits lecture/1 credit lab)

**ITEC 2220 Database Administration & Security, 4 credits**

This course is designed to teach the student how to administer a Database (DB) Server. Topics include: planning and installing the database; manage storage; create user accounts; assign security; create and manage databases; transfer data into and out of the server's databases; and data warehousing concepts. Course instruction is enhanced through hands-on labs, projects, and exercises. (Prerequisites: ITEC 1002 or ITEC 1003) (3 credits lecture/1 credit lab)

**ITEC 2230 Network Security Fundamentals, 4 credits**

In this course, we will take an in-depth look at network security concepts and techniques. Students will examine theoretical concepts that make the world of security unique. This course provides a fundamental understanding of network security principles and implementation, authentication, types of attacks, malicious code, email threats and countermeasures, Web applications, remote access, and file and print services, intrusion detection systems, firewalls, and physical security concepts, security policies, disaster recovery, and computer forensics. This course will adopt a practical, hands-on approach when examining networking security techniques along with examining different network strategies. (Prerequisites: ITEC 1002 or ITEC 1003 or Instructor approval) (3 credits lecture/1 credit lab)

**ITEC 2311 User Experience and Interface Design, 4 credits**

This course introduces the user-interface design cycle. Along the way learners are exposed to user experience design concepts, user research, elements of user experience, information architecture, wireframing, design tools, usability assessment, and communication. Industry standard tools and technologies will be used with an emphasis on hands-on experience. (Prerequisite: ITEC 1016) (4 credits lecture/0 credits lab)

**ITEC 2317 Web Interactivity Technologies, 4 credits**

Web interactivity tools will be used to develop a web application. The course will cover the principles of web services, web security, search engine optimization, and content management systems. Writing documentation, critiquing web application code, and giving feedback on web application code will be practice. (Prerequisites: TLIT 1005, ITEC 2100 and ITEC 1016) (3 credits lecture/1 credit lab)

**ITEC 2326 Gaming Technologies, 4 credits**

This course introduces the student to game programming. Using a game engine, that student will develop games that employ sprites, use vector coordinates to position sprites, incorporate sound effects, and respond to user input from the keyboard and the mouse. The student will implement games using object-oriented programming (OOP) concepts. The course emphasizes OOP concepts such as: sequence structures, selection structures, classes, objects, and methods or functions. Writing documentation, critiquing game codes, and giving feedback on game code will be practiced. (Prerequisite: ITEC 2100) (3 credits lecture/1 credit lab)

**ITEC 2331 Advanced Gaming Technologies, 4 credits**

This course builds on concepts gained in Gaming Technologies. A game engine will be used to create more advanced games employing collision detection and animation using sprites. Concepts from physics, such as gravity and acceleration, will be used to create collisions. The student will implement games that read data from files, use collections to store data, and use Object-Oriented Programming (OOP) concepts. This course emphasizes OOP concepts such as inheritance and polymorphism. Writing documentation, critiquing game code, and giving feedback on game code will be practiced. (Prerequisites: ITEC 2326) (3 credits lecture/1 credit lab)

**ITEC 2340 Scripting Languages, 4 credits**

This course introduces students to the latest scripting technologies with an emphasis on designing and developing dynamic web pages for both client-side and server-side execution. (Prerequisites: ITEC 1016 and ITEC 2100 or instructor approval) (3 credits lecture/1 credit lab)

**ITEC 2342 Game Scripting, 2 credits**

The course focuses on using scripting languages to create or enhance games. Topics include programming logic, event handling, functions, variables, and objects as related to game development. (Prerequisites: ITEC 1016) (1 credit lecture/1 credit lab)

**ITEC 2347 Software and Game Testing, 4 credits**

This course provides an overview of software and game testing. Topics covered include testing methodology, testing importance, test case creation, testing lifecycle, testing tools, bug categories, and documenting bugs. Student will gain hands-on experience testing software applications and games. (Prerequisites: None) (3 credits lecture/1 credit lab)

**ITEC 2407 Internetworking Devices I, 4 credits**

This course provides instruction in the design and implementation of Local Area Network (LAN) and Wide Area Network (WAN) networks using internetworking devices. (Prerequisites: ITEC 1002 or ITEC 1003) (3 credits lecture/1 credit lab)

**ITEC 2408 Internetworking Device II, 4 credits**

This course provides advanced instruction in the design and implementation of Local Area Network (LAN) and Wide Area Network (WAN) using internetworking devices. Topics include the installation, operation, and troubleshooting of a small to medium-size network, LAN switching technologies, routing, and WAN technologies. (Prerequisites: None; Co-requisite: ITEC 2407) (3 credits lecture/1 credit lab)

**ITEC 2411 Networking Scripting, 2 credits**

This course addresses the design of scripting languages and their applications. Demonstrate writing simple scripts to automate system admin-

istration tasks using appropriate languages. (Prerequisites: ITEC 1002 or ITEC 1003 or Instructor Approval) (2 credits lecture/0 credits lab)

#### **ITEC 2415 Virtualization Technologies, 4 credits**

In this course, you gain the skills needed to install, configure and manage virtual servers and workstations. Students will learn to employ VMware, Microsoft virtual machine (VM), leverage VMs to build testing, support and training environments, partition physical servers to decrease operating costs and migrate from physical to virtual machines. Additional topics include using hypervisors, or a virtual machine monitor (VMM), to facilitate workload delivery, how to manage a centralized, on-demand application delivery framework and implement fail-safe system backup and recovery strategies. (Prerequisites: ITEC 1002 or ITEC 1003 or subject to Instructor Approval) (3 credits lecture/1 credit lab)

#### **ITEC 2430 Firewall Security, 4 credits**

This course provides foundational information concerning firewall technology, remediation and security risks, network security design, implementation, and monitoring of a firewall network security plan. This plan will identify elements of firewall design, types of security threats, and responses to security attacks. (Prerequisite: ITEC 1002 or ITEC 1003 or Instructor Approval) (3 credits lecture/1 credit lab)

#### **ITEC 2440 IDS/IPS and Auditing , 4 credits**

This class will cover the implementation of Intrusion Detection/Intruder Prevention (IDS/IPS) systems in the enterprise environment. Students will work with a variety of systems to recognize hostile activity both inside and outside the organization and appropriate responses. Weak points in an organization's security profile and concepts of Information Technology (IT) auditing will be discussed. (Prerequisite: ITEC 1002 or ITEC 1003) (3 credits lecture/1 credit lab)

#### **ITEC 2450 Ethical Hacking , 4 credits**

This class will utilize an interactive environment in which scanning, testing, hacking, and securing a network occurs. Each student will work with current essential security systems. The course will introduce perimeter defense, scanning, and attacking networks. Students then learn how intruders escalate privileges and what steps can be taken to secure a system. (Prerequisite: ITEC 1002 or ITEC 1003) (3 credits lecture/1 credit lab)

#### **ITEC 2501 Android Application Development, 4 credits**

Applications will be created for an deployed to the Android Operating Systems (OS). The course will cover designing a user interface, storing and retrieving data, using a content provider, integrating with a web service, using location services, displaying images, and playing audio files. Project management techniques will be implemented. Critiquing an Android OS application and providing feedback on the application will be practiced.(Prerequisite: ITEC 2105) (3 credits lecture/1 credit lab)

#### **ITEC 2506 Apple Programming, 4 credits**

The course focuses on programming for the Apple mobile Operating System (OS). The course will cover variables, constants, type inference, variable scope, loops, decision structures, arrays, and functions. Object-oriented programming concepts including encapsulation, inheritance, and polymorphism will be examined. Critiquing programming code and providing feedback on code will be practiced. (Prerequisite: ITEC 2100) (3 credits lecture/1 credit lab)

#### **ITEC 2511 Apple Mobile Application Development, 4 credits**

This course focuses on developing Apple mobile applications and deploying applications to an Apple mobile device emulator. The course covers designing user interfaces, working with views and view controllers, and working with navigation controllers. Developing an Apple mobile application that displays images and plays sounds is covered. (Prerequisites: ITEC 2506) (3 credits lecture/1 credit lab)

#### **ITEC 2520 Apple Mobile Application Development, 4 credits**

This course focuses on developing Apple mobile applications and deploying applications to an Apple mobile device emulator. The course covers designing user interfaces, working with views and view controllers, and working with navigation controllers. Developing an Apple mobile application that displays images and plays sounds is covered. (Prerequisites: ITEC 2506) (3 credits lecture/1 credit lab)

#### **ITEC 2600 Application Development, 4 credit**

This course focuses on introductory programming using development tools. The course will cover installing and using an Integrated Development Environment (IDE). Programming principles such as variables, constants, data types, variable scope, decision structures, repetition structures, and arrays will be covered. The concept of using methods to modularize code will be discussed. Object-oriented programming concepts including objects, classes, encapsulation, inheritance, and polymorphism will be examined. Agile development practices will be introduced. Critiquing code and providing feedback on code will be practiced. Writing documentation, including comments in the code, will be covered. (Prerequisites: ITEC 2100) (3 credits lecture/1 credit lab)

#### **ITEC 2601 Database Application Development, 4 credit**

This course focuses on intermediate programming using development tools. The course will cover developing, compiling, deploying, and testing applications using an Integrated Development Environment (IDE). Applications that employ User Interfaces (UIs) for specific operating systems will be developed. The concept of using the debugger to troubleshoot errors will be examined. Developing applications using databases will be introduced. Database concepts will be examined in the context of application development. One or more programming projects will be implemented using agile practices. Documenting programming code, critiquing code, and providing feedback on code will be practiced. (Prerequisites: ITEC 2100 and ITEC 2600) (3 credits lecture/1 credit lab)

#### **ITEC 2700 Artificial Intelligence, 4 credit**

This course deals with a broad range of Artificial Intelligence (AI) topics including supervised and unsupervised learning, AI algorithms, machine learning, neural networks, and intelligent agents. Hands-on exercises will be used to demonstrate AI. (Prerequisites: ITEC 1011) (3 credits lecture/1 credit lab)

#### **ITEC 2901 Integrated Capstone Project, 4 credits**

This course is designed as the culmination of the student's educational experience. Students will be given the opportunity to work as a member of an integrated development team to analyze, design, develop, test and/or document an Information Technology (IT) system to a real-world scenario. Each student will be assigned to a development team and given a user requirement statement for an IT project. Each team will be fully responsible for all aspects of the project from project planning to demonstration of the completed project to a review board. (Prerequisite: Course to be taken in student's last semester or Instructor Approval) (0 credits lecture/4 credits lab)



### **TLIT 1005 Technology Fundamentals, 3 credits**

This is a college level course which introduces current business and social technologies and how to use software applications as productivity tools. The fundamentals of file management, the internet/web, hardware, software, operating systems, security, and ethics will be introduced. The course will introduce word processing, spreadsheet software, presentation software and other microcomputer applications using Windows and the Microsoft Office suite. (Prerequisites: None) (2 credits lecture/1 credit lab)

## **Judicial Reporting/Broadcast Captioning**

### **JRBC 1000 Realtime Reporting Orientation, 1 credit**

Students will receive a brief overview of what realtime machine shorthand is and will be introduced to careers in realtime machine shorthand. Both the Judicial Reporting and Captioning programs will be reviewed. This course will examine the history of reporting, professional associations, equipment needs, technological trends, and role of the working court reporter and/or captioner within Judicial Reporting and Captioning fields. (Prerequisite: None) (1 credit lecture/0 credits lab)

### **JRBC 1005 Realtime Reporting I, 4 credits**

This course is the instruction of basic realtime machine shorthand theory for judicial reporting and captioning. The course will teach the student how to read, write, and transcribe the spoken word with punctuation by means of a realtime translation theory. Students will write on their steno machine using live dictation, electronic media and/or realtime technology, and teacher interaction. Students will read back, analyze steno outlines, and produce transcriptions at various lengths from their steno outlines on a weekly basis. Using computer-assisted technology (CAT) software, students will begin to build a personal dictionary. A personalized Instructional Development Plan (IDP) shall be developed to support student success in achieving prescribed program outcomes and shall be a joint effort between teacher and student. The IDP shall be reevaluated at least monthly and provide a means for regular faculty feedback and coaching. Students should practice as much as possible, with 18 hours per week being a minimum. (Prerequisite: ADSC 1003 or successful typing testout at 25 wpm or more) (3 credits lecture/1 credit lab)

### **JRBC 1031 Foundations of Law, 3 credits**

This course is an overview of law covering all major areas of American law and the American legal system. Topics include civil law, criminal law, the judicial system (discovery, trial, and appellate processes), legal terminologies, and methods of researching legal citations. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **JRBC 1105 Realtime Reporting II, 4 credits**

This course is the continued instruction of basic realtime machine shorthand theory for judicial reporting and captioning. The course will teach the student how to read, write, and transcribe the spoken word with punctuation by means of a realtime translation theory. Students will write on their steno machine using live dictation, electronic media and/or realtime technology, and teacher interaction. Students will read back, analyze steno outlines, and produce transcriptions at various lengths from their steno outlines on a weekly basis. Students will begin speedbuilding, with a goal of 60 to 80 wpm. Using computer-assisted technology (CAT) software, students will continue to build a personal dictionary. A personalized Instructional Development Plan (IDP) shall be continued to support student success in achieving prescribed program outcomes and shall be a joint effort between instructor

and student. The IDP shall be reevaluated at least monthly and provide a means for regular faculty feedback and coaching. Students should practice as much as possible, with 18 hours per week being a minimum. (Prerequisite: JRBC 1005) (3 credits lecture/1 credit lab)

### **JRBC 1120 Realtime Reporting Technology, 3 credits**

This course introduces a number of introductory technology concepts and terminology used with both operating systems and application software. Students will learn basic computer-aided transcription (CAT) and realtime translation software features. Students will learn about different types of technology applications that are currently used in different settings, including the computer-integrated courtroom (CIC), depositions, captioning and CART. (Prerequisites: JRBC 1000 and JRBC 1005) (2 credits lecture/1 credit lab)

### **JRBC 1200 Realtime Reporting III, 4 credits**

This course will refine writing the spoken word with punctuation by means of a realtime translation theory for machine shorthand in court reporting and captioning. Students will continue working on speed and accuracy goals for literary, jury charge, and 2-voice testimony. This course focuses on 80-100 wpm. Students will continue reading, analyzing, and transcribing their steno notes. Students will hear dictation (live, online, or electronic media) for additional practice. Students are expected to practice a minimum of 18 hours per week. Students are expected to utilize the lab as assigned. This is an open-exit course; once requirements are completed, students may move on to Realtime Reporting IV (JRBC 2000). (Prerequisite: JRBC 1105) (3 credits lecture/1 credit lab)

### **JRBC 1400 Realtime Principles, 2 credits**

This course teaches the basic to intermediate skills necessary to be a realtime reporter, including resolving conflicts, writing with prefixes and suffixes, resolving word boundary issues, learning three realtime alphabets, writing clean numbers, working with job dictionaries, and dictionary maintenance. Students will prepare to take the CPR exam. Students must pass three tests at 180 wpm with 97 percent realtime accuracy. (Prerequisites: JRBC 2100 or instructor approval) (1 credit lecture/1 credit lab)

### **JRBC 1405 Broadcast Captioning & CART Practicum, 2 credits**

This course will provide students with an opportunity to perform actual captioning. Students will work to refine their writing skills for accurate captioning. Students will work with industry standard equipment and will caption many types of programming. Students will also practice in-classroom CART. This course will teach students how to perform CART or on-air captioning. Students will learn Captioning Technology. Students will work to create, build and enhance different job dictionaries, including sports, weather, geography, geo-political terms and names, national and international news, etc. (Prerequisites: Successful completion of Judicial Reporting Program or instructor approval) (1 credit lecture/1 credit lab)

### **JRBC 2000 Realtime Reporting IV, 4 credits**

This course will refine the student's conflict-free machine shorthand theory for computer-assisted, realtime translation in court reporting, captioning and CART. Students will continue to work on speed and accuracy goals for literacy, jury charge, and 2-voice testimony. The course focuses on 120-140 wpm. Students will continue reading and transcribing their steno notes. Students will also utilize CD discs and cassette tapes from the lab for additional practice. Students are expected to practice a minimum of 15 hours per week outside of class. Students



are expected to utilize the lab as assigned. This is an open-exit course; once requirements are completed, students may move on to Realtime Reporting V (JRBC 2100). (Prerequisites: JRBC 1200) (3 credits lecture/1 credit lab)

### **JRBC 2011 Transcription & English I, 3 credits**

Students will learn Basic English rules that are specific to the reporting and captioning profession and how to apply them when writing and transcribing. Students will learn the basic rules of grammar, spelling, punctuation, and capitalization. Students will expand their word knowledge through vocabulary development. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **JRBC 2016 Transcription & English II, 3 credits**

This course will cover transcript production and considerations that need to be made when creating transcripts for sale. Students will learn transcript production of Judicial Reporting proceedings as well as for broadcast captioning/CART. Students will learn to use reference materials when producing transcripts and how to locate additional references when needed. Students will also learn Advanced English rules that are specific to the reporting profession and how to apply them when writing and transcribing. Students will continue to develop advanced vocabulary usage. (Prerequisites: JRBC 2011) (3 credits lecture/0 credits lab)

### **JRBC 2030 Judicial Reporting Procedures, 3 credits**

This course provides a hands-on learning environment in the study of court reporting procedures that will be used in trials, depositions, administrative hearings, and other judicial proceedings. Learners will have the opportunity to develop techniques in marking and handling of exhibits, indexing and storing steno notes, interrupting a speaker, swearing in or affirming witnesses and interpreters, certifying questions, transcript preparation and production, transcribing voir dire of the jury and witnesses, and polling of the jury. This course applies the National Court Reporters Association (NCRA) Code of Professional Ethics in simulated situations and case studies. (Prerequisites: JRBC 1105) (3 credits lecture/0 credits lab)

### **JRBC 2036 Word Enrichment, 3 credits**

This is a vocabulary and usage course for realtime court reporting students. This course will focus on vocabulary, with an emphasis on comprehension and words that are frequently confused and misused. Students will prepare for the Registered Professional Reporter (RPR) certification written exam, including the study and review of legal and medical terminologies, court reporting procedures, technology, and court reporting skills. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **JRBC 2040 Business Success for Realtime Careers, 2 credits**

This course is an overview of the office environments of small businesses and independent contractors in the realtime reporting and captioning careers. This course will focus on setting up an office, tax preparedness, written business communications, promotional presentations, effective resume writing, and job-searching skills. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **JRBC 2100 Realtime Reporting V, 4 credits**

This course will refine the student's conflict-free machine shorthand theory for computer-assisted, realtime translation in court reporting and captioning and assistive realtime reporting for the hearing impaired. Students will continue working on speed and accuracy goals. Students will continue reading and transcribing their steno notes. Students will

also utilize CD recordings for additional practice. Students are expected to practice a minimum of 15 hours per week outside of class. This is an open-exit course; once requirements are completed, Judicial Reporting students may move on to JRBC 2120, Realtime Reporting VI. (Prerequisites: JRBC 2000) (3 credits lecture/1 credit lab)

### **JRBC 2120 Realtime Reporting VI, 4 credits**

This course will refine the student's conflict-free machine shorthand theory for computer-assisted, realtime translation in court. Students will continue working on speed and accuracy for literary, jury charge and 2-voice testimony. This course focuses on 200-225 wpm. Students will continue reading and transcribing their steno notes. Students will also utilize CD discs and cassette tapes from the lab for additional practice. Students are expected to practice a minimum of 15 hours per week outside of class. Students are expected to utilize the lab as assigned. (Prerequisites: JRBC 2100) (3 credits lecture/1 credit lab)

### **JRBC 2127 CART and Captioning Technology and Procedures, 3 credits**

This course provides an opportunity to perform hands-on captioning in a controlled lab environment. Students will work with industry-standard equipment and will caption many types of programming. Students will also learn how to write in various Communication Access Realtime Translation (CART) venues, including on-site and remote. Students will write 15-minute segments of broadcast programming, including news, sports, and entertainment, with a goal of 98.5 percent realtime accuracy or higher. Students will write two 30-minute class lectures, meeting/seminar programs, or Web cast meeting segments with a goal of 98.5 percent verbatim accuracy, or higher, with variable speeds of 180-200 wpm. Students will learn captioning and CART technology, procedures, and research. Students will learn how to build different job dictionaries specific to the captioning environment. Students will refine their realtime writing, including resolving conflicts, writing with prefixes and suffixes, resolving word-boundary issues, learning four alphabets, and writing clean numbers. Students will write realtime verbatim tests starting at 120 wpm, with a goal of passing three tests at 180 wpm with 97 percent realtime verbatim accuracy. (Prerequisites: JRBC 2000) (2 credits lecture/1 credit lab)

### **JRBC 2135 Broadcast Captioning & CART Internship, 2 credits**

Provides the student with purposeful occupational experience in Communication Access Realtime Translation (CART) and Broadcast Captioning settings. Internships are arranged by the college to provide the student actual stenographic realtime writing situations alongside professional CART and Broadcast Captioners. (Prerequisites: JRBC 2000) (0 credits lecture/0 credits lab/2 credits OJT)

### **JRBC 2140 Judicial Reporting Internship, 2 credits**

This course will give the student actual writing time in a reporting setting. Wherever possible, students will be given opportunities to do realtime reporting in court and deposition settings with official and freelance reporters. Students will use these reporting opportunities to create a (not-for-sale) transcript. Internship opportunities will only be arranged through the school. (Prerequisites: None) (0 credits lecture/0 credits lab/2 credits OJT)

### **JRBC 3101 Scoping Procedures, 3 credits**

This course will emphasize concepts related to the scoping experience, including reading raw steno of multiple reporters, Computer-Aided Transcription (CAT) software editing, proofreading, transferring files,



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research, reporter/scopist working relationship, and setting up a home office. (Prerequisite: JRBC 1105) (3 credits lecture/0 credits lab)

## Machine Trades

### **MACH 1090 Machining Fundamentals, 2 credits**

This course provides students an opportunity to have hands-on experience of reading a blueprint of a part and going through the process of manufacturing a product. (Prerequisites: None) (1 credit lecture/1 credit lab)

### **MACH 1101 Milling, 4 credits**

This course covers basic milling machine, drill press, and band saw operation, safety, machine controls, machine setup, common milling operations such as cutting tools geometry, conventional milling machine principles, machining feeds and speeds calculation. The operation of drill presses and drilling tools such as countersinking, counter boring, tapping, reaming is also addressed. (Prerequisites: None) (Co-requisites: MACH 1106) (3 credits lecture/1 credit lab)

### **MACH 1106 Lathe, 3 credits**

This course covers basic lathe operation, safety, machine controls, machine setup, common lathe operation such as cutting tools geometry, grinding tools, facing, turning, knurling, boring, external threading, internal threading, grooving, and reaming. Machine feeds and speeds calculation are covered. (Prerequisites: None) (Co-requisites: MACH 1101) (1 credit lecture/2 credits lab)

### **MACH 1121 Metrology, 2 credits**

This course covers the introduction to the calibrations and use of inspection instruments, steel rules, vernier, dial and digital calipers, micrometer, telescoping gauge, small-hole gauge, dial indicators, precision height gauge, optical comparator, and gauge blocks. This course will build reference skills on mathematics, mechanics, and strength of materials, dimensioning, gauging, fits, tooling and manufacturing processes, along with mechanisms such as threads and gears, with the use of standard manufacturing reference material. We will discuss the principles of Statistical Process Control (SPC) and International Organization for Standardization (ISO) standards. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **MACH 1132 Blueprint Reading I/CAD, 3 credits**

This course includes the basic interpreting and drawing of 2D Engineering drawing principles. Topics include one-, two- and three-view drawings, dimensioning, tolerance, symbols, sketching, incline surfaces, circular features, sectional views, surface texture, and auxiliary views. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **MACH 1140 CAD I, 1 credits**

This course includes the basic use and operation of 2D CAD (Computer Aided Design) software. This course covers the construction and manipulation of drawings, using software to draw and dimension parts. (Prerequisites: None) (1 credit lecture/0 credits lab)

### **MACH 1171 Math for Machinists, 3 credits**

This course covers common fraction, decimal, and percentage calculation applications to manufacturing standards. Linear measurements, geometric principles used in machine shops including compound angles, plane geometry, trigonometry, oblique triangles, parallel lines, laws of sine, cosine, and tangent are covered. (Prerequisites: MATH 0801 or appropriate test score) (3 credits lecture/0 credits lab)

### **MACH 1200 Advanced Machining, 3 credits**

This course covers advanced milling machine and lathe operation including machine safety, the manufacturing of integrated close tolerance projects with common machine tool and prints. The use of attachments and special processes will be covered. (Prerequisites: None) (1 credit lecture/2 credits lab)

### **MACH 1220 Grinding, 2 credits**

This course covers grinding machine operations in a tool room setting. The manufacturing of integrated close tolerance projects with common grinders. Topics covered include set-ups, form grinding, the use of attachments, and special processes. (Prerequisites: MACH 1101, MACH 1106, and MACH 1121) (1 credit lecture/1 credit lab)

### **MACH 1231 Blueprint Design/CAD II, 1 credit**

This course includes standards of graphic communication of engineering drawing principles, orthographic projections, dimensioning, tolerancing and section views. The course makes extensive use of modern software to create engineering drawings and introduce solid modeling. (Prerequisites: None) (1 credit lecture/0 credits lab)

### **MACH 1240 Geometric Dimensioning & Tolerancing, 3 credits**

This course establishes a solid understanding of geometric principles and methodologies of geometric dimensioning and tolerancing. Topics covered include symbols, datum's and gauging principles, form and profile, orientation, location and run out tolerances, and virtual condition. We will study the setup and operation of Coordinate Measuring Machine (CMM). (Prerequisites: MACH 1121 and MACH 1132) (3 credits lecture/0 credits lab)

### **MACH 1251 CNC Machining, 3 credits**

This course will introduce the students to the basic fundamentals of computer numerical controls. Topics included are introduction to safety procedures, conversational controls, and operation of various type of CNC machine controls. (Prerequisites: MACH 1101, MACH 1106, MACH 1121 and MACH 1132) (1 credit lecture/2 credits lab)

### **MACH 1261 CNC Programming I, 2 credits**

This course covers basic programming for CNC (Computer Numeric Control) milling machines along with CNC basic machining language. (Prerequisites: MACH 1171 or MATH 1650) (3 credits lecture/0 credits lab)

### **MACH 1275 Quality Standards, 1 credit**

This course will cover the aspects of quality control as applied to the shop-floor environment including inspection documentation, process control, and equipment used in the collection of data. Topics including Statistical Process Control (SPC), First Article inspections, and applicable inspection collection of data to various industry standards will be covered. (Prerequisites: MACH 1121) (1 credit lecture/0 credits lab)

### **MACH 2310 CNC Milling, 3 credits**

This course will continue the students to the fundamentals of computer numerical controls (CNC) milling centers. Topics included are safety procedures, expose students to setup and editing of operation of various types CNC machine controls. (Prerequisites: MACH 1171, MACH 1251, and MACH 1261) (Co-requisites: MACH 2320) (1 credit lecture/2 credits lab)



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**MACH 2320 CNC Turning, 3 credits**

This course will continue the students in the advanced fundamentals of Computer Numerical Controls (CNC) turning centers. Topics included are safety procedures, expose students to setup and editing of operation of various types CNC machine controls. (Prerequisites: MACH 1171, MACH 1251, and MACH 1261) (Co-requisite: MACH 2310) (1 credit lecture/2 credits lab)

**MACH 2331 CAM, 1 credit**

This course is an introduction to Computer Aided Manufacturing (CAM) systems. Subjects address the use of 2D basic principles, techniques, and applications of computer numerically controlled machine tools. Includes the planning, use, expansion, and updating of the computerized systems that are used to meet the needs of industry. (Prerequisites: MACH 1200, MACH 1231, and MACH 1261) (1 credit lecture/0 credits lab)

**MACH 2340 CNC Programming II, 2 credits**

This course will cover Intermediate level programming. Topics included such as sub programs, multi fixtures and special function. (Prerequisites: MACH 1261) (1 credit lecture/2 credits lab)

**MACH 2351 Mold/Die Making Theory, 3 credits**

This course covers basic manufacturing fundamentals of mold construction (transfer and injection molds) runners, gates, cores, cavities, injections, ejection, casting, joining, polymers and powder metals. It also consists of basic manufacturing principles of blanking and piercing dies including deformation, sheet metal forming, bending, cutting clearance, punches, pilots, strippers, and die block construction. (Prerequisites: MACH 1200, MACH 1221 and MACH 1240) (3 credits lecture/0 credits lab)

**MACH 2360 Fixture and Tooling, 4 credits**

This course is to gain design knowledge and actual building skills in machining set ups and operations. Course consists of designing tools, gages, simple jigs, and fixtures for; lathe, vertical mills, drill press, band saw, surface grinders, etc., while working on projects that simulate real basic construction practices employed in mass production processes. We will study basic metallurgy. (Prerequisites: MACH 1231, MACH 1240 and MACH 1251) (1 credit lecture/3 credits lab)

**MACH 2411 Tool and Cutter Grinding, 2 credit**

This course covers the basic knowledge and skills needed for grinding cutters as it pertains to the manufacturing industry. (Prerequisites: MACH 1220 and MACH 2360) (1 credit lecture/1 credit lab)

**MACH 2420 EDM Machining, 2 credits**

This course covers the basic fundamentals of conventional E.D.M. theories and operations. Topics included are safety, components, dielectric, electrodes, power supply controls, amperes, electronic envelope, work piece, on-off time, arc gap. Programming and operation of CNC Ram, and Wire. (Prerequisites: MACH 2330) (1 credit lecture/1 credit lab)

**MACH 2435 Swiss Machining 2 credits**

This course will cover the programming and setup of Swiss machine centers. Operations will focus on reduced handling of parts to accomplish turning, milling, drilling, and threading on Swiss machine centers. Utilization of Computer Aid Machining (CAM) software will be covered. (Prerequisites: MACH 1171 or MATH 1650, MACH 2320, MACH 2331, and MACH 2340) (1 credit lecture/1 credit lab)

**MACH 2440 CNC Programming III, 1 credit**

This course will cover Advanced level programming. Topics included such as multi axis and parametric programming. (Prerequisites: MACH 2340) (1 credit lecture/0 credits lab)

**MACH 2451 CNC Design and Manufacture, 3 credits**

This course covers the advanced machining operations required to design a construct a complete manufactured cap stone project. The use of CNC and manual machines required in manufacturing and design will be used. An overview will be presented at the completion of manufacturing. (Prerequisites: MACH 2310, MACH 2330, MACH 2331, MACH 2340, MACH 2351 and MACH 2360) (1 credit lecture/2 credits lab)

**MACH 2462 Multi-Axis Milling, 3 credit**

This course will cover the programming and setup of multi-axis milling machines utilizing 4th and 5th axis rotaries. Programming utilizing Computer Aid Machining (CAM) software will be covered. This may include but no limited to focusing on non-standard plane orientation of parts through locked positioning and full rotary cutting. Fixture systems and probing will be covered. (Prerequisites: MACH 1171 or MATH 1650, MACH 2310, MACH 2331, MACH 2340, and MACH 2360) (Co-requisite: MACH 2472) (1 credit lecture/2 credits lab)

**MACH 2472 Multi-Axis Turning, 3 credits**

This course will cover the programming and setup of multi-axis turning centers utilizing live tooling. Operations will focus on reduced handling of parts to accomplish turning, milling, drilling, and threading on multi-axis turning centers. Utilization of Computer Aid Machining (CAM) software will be covered. (Prerequisites: MACH 1171 or MATH 1650, MACH 2320, MACH 2331, and MACH 2340) (Co-requisite: MACH 2462) (1 credit lecture/2 credits lab)

**MACH 2510 Multi Axis CNC Programming, 4 credits**

This is an advanced course designed to give the student a deeper understanding of multi axis programming. This course deals with complex machine programming methods and will require a prior understanding of "G" and "M" code programming. (Prerequisites: Evaluation Exam through Machine Trades department) (3 credits lecture/1 credit lab)

**MACH 2520 Multi Axis CNC Programming, 5 credits**

This is an advanced course designed to give the student an understanding of multi axis machining. This course deals with complex setup and machining methods and will require a prior understanding of advanced "G" and "M" code programming. (Prerequisites: Evaluation Exam through Machine Trades department) (1 credit lecture/4 credits lab)

## Medical Assistant

**MAST 1200 Medical Assisting Seminar, 2 credits**

This course addresses the legal and ethical issues facing the Medical Assistant profession. (Prerequisites: None; Co-requisites HLTH 1040 or prior completion; Restricted to the following majors: Medical Assistant AAS and diploma) (2 credits lecture/0 credits lab)

**MAST 1301 Medical Administrative for Medical Assistant, 4 credits**

This course will introduce the student to the administrative duties performed by a Medical Assistant. Emphasis will be on front office duties: telecommunications, appointment scheduling, mail processing, banking, medical records, insurance, bookkeeping, oral and written



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communications, and medical coding. Other topics included in the course will be office and human resource management as they apply to the Medical Assistant. The medical assistant student will be introduced to a computerized Electronic Medical Records (EMR) and will complete exercises and simulations of tasks that are seen in a medical practice setting. (Prerequisites: ADSC 1003 or 25 words per minute (wpm) keyboarding ability and restricted to the following majors: Medical Assistant AAS and diploma; Co-requisites: HLTH 1040 or prior completion) (4 credits lecture/0 credits lab)

#### **MAST 1401 Introduction to Pharmacology, 2 credits**

This course develops awareness of basic background in pharmacological concepts. Topics such as drug laws, the actions of medication, abbreviations and vocabulary will be introduced. The various drug classifications of medications are discussed, along with how to use medication references. (Prerequisites: HLTH 1005 and HLTH 1040 and restricted to the following major: Medical Assistant AAS and diploma) (2 credits lecture/0 credits lab)

#### **MAST 1601 Laboratory I, 3 credits**

This course is designed to introduce the student to clinical laboratory. Basic aspects of laboratory safety, use and maintenance of laboratory equipment, quality controls, Clinical Laboratory Improvement Amendments (CLIA) Waived urinalysis, and CLIA Waived microbiology will be covered in theory and simulated labs. (Prerequisites: HLTH 1005, HLTH 1040, ENGL 1107 or ENGL 2105 and Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider and must be American Heart Associated) (Co-requisites: MAST 1700) (1 credit lecture/2 credits lab)

#### **MAST 1700 Clinical Procedures I, 3 credits**

This course is designed to teach the fundamentals of Medical Assisting in Family Practice, Internal Medicine, and Obstetrics and Gynecology (OB/GYN) and Pediatrics. Medical and surgical asepsis, microbial control, autoclaving, bandaging, instrument identification, minor surgery, medical examination of the patient, documentation, and vital signs will be discussed. (Prerequisites: HLTH 1005, HLTH 1040 and ENGL 1107 or ENGL 2105 and Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider (must be current throughout the externship and Instructor approval.) (Co-requisites: MAST 1601) (1 credit lecture/2 credits lab)

#### **MAST 2601 Laboratory II, 3 credits**

Building laboratory skills is continued in this course. Hematology, coagulation, serology, and chemistry will be discussed and performed in a simulated lab setting. Phlebotomy and capillary punctures will also be discussed and taught. (Prerequisites: MAST 1601 and Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider and must be American Heart Associated and required instructor approval. This course is restricted to the following major: Medical Assistant AAS and diploma. Co-requisites: MAST 2701) (1 credit lecture/2 credits lab)

#### **MAST 2701 Clinical Procedures II, 3 credits**

This course is designed to cover the fundamentals of drug administration, nutrition, emergency medicine, casting, and fracture care. Therapeutic modalities, pediatrics, geriatrics, and patient education

will also be covered. This course will also demonstrate how to perform a 12-lead electrocardiogram (EKG). Students will perform EKGs in a simulated lab along with reviewing the anatomy of the heart and circulatory system. (Prerequisites: MAST 1700 and Documentation of Hepatitis B immunity or documentation of two Hepatitis B immunizations prior to starting these courses. Copy of current American Heart Association BLS Provider and must be American Heart Associated and required instructor approval. This course is restricted to the following majors: Medical Assistant AAS and diploma; Co-requisites: MAST 2601) (1 credit lecture/2 credits lab)

#### **MAST 2901 Externship, 6 credits**

This course is designed to provide on-the-job experience. The student will be assigned to work in a physician's office (without compensation) for a total of 280 hours. The student will work under the supervision of clinic personnel performing clinical, laboratory, and administrative duties pertinent to the student's technical training. (Prerequisite: Documentation of immunity to all required vaccination along with TB blood tests. Documentation of negative QuantiFERON-TB Gold test (QFT-G), QuantiFERON -TB In-Tube test (GFT-GIT) or T-SPOT and current CPR card. This course is restricted to the following majors: Medical Assistant AAS and diploma and required instructor approval.) (0 credits lecture/0 credits lab/6 credits OJT)

### **Mathematics**

#### **MATH 0801 Basic Math, 4 credits**

This course provides an overview of the use of whole numbers, fractions, decimals, and percents. In addition, the topics of ratio, proportion, measurement, area, perimeter, and algebraic equations will be introduced. Course content will include the application of basic math skills to the solution of occupational situation problems. The course is designed for students who wish to review and improve their basic math skills. (Prerequisites: None) (4 credits lecture/0 credits lab)

#### **MATH 0900 Elementary & Intermediate Algebra, 5 credits**

This course provides students with those skills and insights from algebra which are necessary to perform well in any college-level mathematics course. Topics include signed numbers, the problem solving procedure, performing arithmetic operations on algebraic expressions and polynomials, factoring polynomials, using negative exponents and scientific notation, solving and graphing linear equations and inequalities, graphing other relations, solving literal equations and apply formulas, solving systems of equations, solving quadratic, exponential equations, and analyzing functions. (Prerequisites: MATH 0801 or appropriate score on placement test) (5 credits lecture/0 credits lab)

#### **MATH 0950 Topics in Intermediate Algebra, 2 credits**

This course is a continuation from Elementary Algebra and is designed to expose the student to higher level topics in Algebra. Topics include systems of equations, radical equations, relations and functions, inverse functions, quadratic equations, graphs of functions, and exponential functions. (Prerequisites: Appropriate score on Elementary Algebra placement test) (2 credits lecture/0 credits lab)

#### **MATH 1010 Dosage Calculations for Health Care Professionals, 1 credit**

The course will include the different systems of measurement (metric and household) and the different equivalents of measure used to convert between the systems. The ratio-proportion method will be emphasized to set up and solve basic dosage calculations, dosage calculations in-



volving conversions, and calculations to reconstitute medications. IV calculations will be performed to calculate drops per minute and milliliters per hour of the prescribed IV solution to be administered. Calculations for adult and pediatric dosages based on body weight will be performed. (Prerequisites: MATH 0801 with a B or better or appropriate score on placement test.) (1 credit lecture/0 credits lab)

#### **MATH 1070 Technical Mathematics I, 3 credits**

This course is a combination of applied algebra and geometry. The content includes solving mathematical problems involving signed numbers, algebraic expressions, linear equations, graphs of linear and non-linear functions, exponents, scientific notation, and systems of measurement with unit analysis. Geometry topics include solving problems utilizing areas and volumes, similar triangles and the Pythagorean Theorem. Applications for technical trades will be emphasized. (Prerequisites: MATH 0801 or appropriate score on placement test) (3 credits lecture/0 credits lab)

#### **MATH 1080 Technical Mathematics II, 2 credits**

This course is a combination of plane and circle geometry and right and non-right triangle trigonometry. Topics covered include solving mathematical problems by applying plane and circle geometry postulates. Right triangle trigonometry and non-right triangle trigonometry will also be covered, including the laws of sine and cosine. Practical applications for technical trades, including layout problems, will be emphasized. (Prerequisites: MATH 1070 or appropriate algebra Accuplacer score) (2 credits lecture/0 credits lab)

#### **MATH 1400 Algebra & Trigonometry, 5 credits**

This course combines material taken from algebra and trigonometry. Topics covered include signed numbers, exponents, algebraic expressions, solving equations, proportion, variation, and systems of measurement. Graphs, scientific and engineering notation, and unit analysis will be used. Right triangle trigonometry applications and trig functions in any quadrant will also be included. Special attention will be given to vectors and sine wave analysis. Applications for technical trades will be included in the course curriculum. (Prerequisites: MATH 0801 or appropriate score on placement test) (5 credits lecture/0 credits lab)

#### **MATH 1500 (MnTC 4) Mathematical Ideas, 3 credits**

This course build a mathematical foundation in logic, set theory, geometry, finance, probability, and statistics for decision making. Emphasis will be placed on using higher order problem solving skills to solve real-life problems. (Prerequisites: MATH 0900, or MATH 0950, or MATH 1080, or MATH 1400, or appropriate score on algebra placement test.) (MN Transfer Goal 4) (3 credits lecture/0 credits lab)

#### **MATH 1550 (MnTC 4) Introduction to Statistics, 4 credits**

This course is an introduction to the principles of statistics, and data analysis using real-world problems. Topics include descriptive statistical measures, probability, graphs and distributions, hypothesis testing, correlation, and linear regression, and inferential statistics. (Prerequisites: MATH 0900, or MATH 0950, or MATH 1080, or MATH 1400, or appropriate score on algebra placement test) (MN Transfer Goal 4) (4 credits lecture/0 credits lab)

#### **MATH 1600 (MnTC 4) College Algebra, 4 credits**

This MN Transfer course is an extension of concepts learned in Elementary and Intermediate Algebra. The course includes analyzing and graphing functions and function inverses including polynomial, radical,

rational, exponential, and logarithmic functions. Additional topics are systems of equations and inequalities, conic sections, and matrix algebra. Supplementary topics may include sequences, series, and probability. (Prerequisites: MATH 0900, or MATH 0950, or MATH 1080, or MATH 1400, or appropriate score on placement test.) (MN Transfer Goal 4) (4 credits lecture/0 credits lab)

#### **MATH 1650 (MnTC 4) College Trigonometry, 3 credits**

This course includes the topics of trigonometric functions and right triangle trigonometry, graphs of the trigonometric functions, trigonometric equations and identities, inverse trigonometric functions, laws of sines and cosines, vectors, trigonometric forms of complex numbers, De Moivre's Theorem, and polar and parametric equations and their graphs. (Prerequisites: MATH 0900, or MATH 0950, or MATH 1080, or MATH 1400, or appropriate score on placement test.) (MN Transfer Goal 4) (3 credits lecture/0 credits lab)

#### **MATH 1700 (MnTC 4) Pre-Calculus, 5 credits**

This MN Transfer course is an extension of concepts learned in Elementary and Intermediate Algebra. The course consists of topics from College Algebra and College Trigonometry. It is intended for students who have had three years of high school math, including trigonometry. The course includes analyzing and graphing functions and function inverses including polynomial, radical, rational, exponential, and logarithmic functions. It also includes systems of equations and inequalities, and matrices. Additional topics are trigonometric functions and right triangle trigonometry, graphs of the trigonometric functions, trigonometric equations and identities, inverse trigonometric functions, laws of sines and cosines, vectors, and trigonometric forms of complex numbers. Supplementary topics may include conic sections, sequences, series, and probability. (Prerequisites: MATH 0900, or MATH 0950, MATH 1080, or MATH 1400, or appropriate score on placement test) (MN Transfer Goal 4) (5 credits lecture/0 credits lab)

### **Mechanical Drafting and Design**

#### **MECH 1200 Mechanical CAD I, 4 credits**

This is the introductory Computer Aided Drafting (CAD) course covering the current version of AutoCAD as a technical drafting tool and operational techniques related to its use. The course will concentrate on drawing set-up, fundamental construction techniques, fundamental dimensioning and plotting. (Prerequisites: None) (2 credits lecture/2 credits lab)

#### **MECH 1216 Drafting Standards, 5 credits**

This covers the basic concepts of engineering drawings and uses sketching as a drafting tool to understand industry drafting and design standards. Topics included are multi-view drawings, fundamental dimensioning practices, symbols identification, fasteners, and other standardized details. (Prerequisites: None) (3 credits lecture/2 credits lab)

#### **MECH 1229 Materials & Processes, 3 credits**

This course covers various engineering materials and their properties as well as manufacturing processes using those materials. The course has a focus on identifying the best material and manufacturing process to satisfy the product design criteria. (Prerequisites: None) (2 credits lecture/1 credit lab)

#### **MECH 1235 Statics and Strengths of Materials, 4 credits**

Analysis of forces on structural and mechanical systems is introduced; topics included resultants of force systems, algebraic and graphical



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conditions of equilibrium of force systems, and analysis of forces acting on structural frameworks. Coverage of strengths includes the mechanical and physical properties of materials such as stress, strain, and modulus of elasticity appropriate to mechanical design problems. Applications include the analysis and design of structural joints, beams, and columns. (Prerequisite: MATH 1080. or Accuplacer College-level Math 50 or appropriate test score.) (3 credits lecture/1 credit lab)

#### **MECH 1245 Sheet Metal Concepts and Applications, 3 credits**

This course covers the concepts and application of sheet metal product design. Concepts include descriptive geometry and pattern development. Sheet metal parts, assemblies, and drawings are created using computer aided design (CAD) software. (Prerequisites: MECH 1216 and MECH 2064 or MECH 2074 or MECH 2084) (1 credit lecture/2 credits lab)

#### **MECH 2035 Process Design Drafting, 3 credits**

This course covers drafting topics related to manufacturing, including but not limited to, engineering change process, welding drawings, casting drawings, electrical drawings, and power transmission concepts and drawings. (Prerequisites: MECH 2064 or MECH 2074 or MECH 2084 and MECH 1216) (1 credit lecture/2 credits lab)

#### **MECH 2045 Design Projects, 4 credits**

This course covers the engineering design process. Students will follow the process while designing solutions to specific problems. The process will be documented using industry best practices. Professional presentation and communication skills are covered in preparation for final project presentations of the design solutions. (Prerequisites: MECH 2064 or MECH 2074 or MECH 2084 and MECH 1216.) (2 credits lecture/2 credits lab)

#### **MECH 2055 Geometric Dimensioning and Tolerancing, 3 credits**

This course covers terms, symbols, and their applications as related to function and relationship in the design process. Drawings will be produced using concepts covered in the course. Geometric dimensioning and tolerancing (GD&T) per recent industry standards will be covered. (Prerequisite: MECH 1216 and MECH 2064 or MECH 2074 or MECH 2084) (3 credits lecture/0 credits lab)

#### **MECH 2064 Introduction to Inventor, 4 credits**

This course covers basic part and assembly modeling techniques, using the latest Inventor computer aided design (CAD) software from Autodesk. Topics will include, but not limited to, sketching, 3D part modeling, assembly modeling, detail drawings, and working drawings. (Prerequisites: None) (2 credits lecture/2 credits lab)

#### **MECH 2074 Solidworks, 4 credits**

This course covers basic part and assembly modeling techniques using the latest SolidWorks computer aided design (CAD) software from Dassault Systems. Topics will include, but not be limited to, sketching, 3D part modeling, assembly modeling, detail drawings, and working drawings. (Prerequisites: None) (2 credits lecture/2 credits lab)

#### **MECH 2080 Special Projects, 2 credits**

This course provides the opportunity to advance industry skills. The students work in an applied drafting environment to achieve objectives mutually agreed upon with the instructor. (Prerequisites: MECH 1216 and MECH 2064 or MECH 2074 or MECH 2084) (0 credits lecture/3 credits lab)

#### **MECH 2084 Introduction to ProE/Creo, 4 credits**

This course covers basic part and assembly modeling techniques using the latest computer aided design (CAD) software from PTC (ProE/CREO). Topics will include, but not be limited to, sketching, 3D part modeling, assembly modeling, detail drawings, and work drawings. (Prerequisites: None) (2 credits lecture/2 credits lab)

#### **MECH 2090 Advanced CAD, 3 credits**

This course covers advanced parametric solid modeling concepts, techniques, and software-specific features and functionality. The course will explain and demonstrate various modeling techniques, basic finite elements analysis (FEA), and assembly motion/animation. (Prerequisite: MECH 1216, and MECH 2064, or MECH 2074, or MECH 2084.) (2 credits lecture/1 credit lab)

### **Occupational Therapy Assistant**

#### **COTA 1001 Introduction to Occupational Therapy, 4 credits**

This course is an introduction to the foundational concepts encompassing the scope of occupational therapy (OT) and the OT process. Many foundational concepts are presented such as a history, philosophy, and values of the profession. The course also reviews the American Occupational Therapy Association's (AOTA) Practice Framework: Domain and Process in-depth, related to key concepts and terminology. Key components of the profession such as therapeutic use of self, interviewing skills, ethics, and diversity, role of the Occupational Therapy Assistant (OTA), professional resources, and regulatory issues are also covered. (Prerequisites: None; Co-requisites: COTA 1105, COTA 1050, and HLTH 1005. This course is restricted to the following major: Occupational Therapy Assistant Program.) (4 credits lecture/0 credits lab)

#### **COTA 1050 Clinical Conditions, 4 credits**

This course is foundational course within the Occupational Therapy Assistant (OTA) program that provides basic information regarding the disease process for a variety of physical, genetic/developmental, trauma/injury induced and psychosocial conditions. It prioritizes the conditions most commonly treated within Occupational Therapy (OT) practice. The following topics are presented for each condition: etiology, symptoms, disease course, prognosis, precautions/contraindications, medical terminology and occupational impact. The concepts of health literacy and the role of the OTA in teaching/learning are also introduced. (Prerequisites: None; Co-requisites: COTA 1001, COTA 1105, and HLTH 1005. This course is restricted to the following major, Occupational Therapy Assistant Program.) (4 credits lecture/0 credits lab)

#### **COTA 1105 Therapeutic Applications I, 3 credits**

Therapeutic Applications I works collaboratively with Intro to Occupational Therapy (OT), building on Occupational Therapy Practice Framework (OTPF) terminology. This course provides skills for activity analysis through the various OT domains and across the lifespan. Historical use of crafts in Occupational Therapy, the process of activity analysis, and the teaching and learning process in relation to client interaction is covered. Professional attributes and student strengths are introduced and assessed. Concepts of grading, adapting activities, and applying these to clinical scenarios are introduced. (Prerequisites: None; Co-requisites: COTA 1001, COTA 1050, and HLTH 1005. This course is restricted to the following Major: Occupational Therapy Assistant Program.) (1 credit lecture/2 credits lab)



**COTA 1155 Therapeutic Applications II, 2 credits**

This course provides foundational concepts for provision of Occupational Therapy (OT) services across various practice settings. This includes the skill required for ethical and professional documentation of OT service delivery, the promotion of occupation-based interventions, the use of frames of references and groups as therapeutic intervention, and Evidence-Based Practice (EBP) analysis of research literature. (Prerequisites: COTA 1001, COTA 1050, COTA 1105, HLTH 1005; Corequisite: COTA 1260, COTA 1270, COTA 1280, COTA 1290, and PSYC 1406. This course is restricted to the following major, Occupational Therapy Assistant.) (1 credit lecture/1 credit lab)

**COTA 1260 Performance Skills and Applications, 3 credits**

This lecture/lab course expands on foundational knowledge from the first semester by addressing specific clinical application concepts and skills related to performance areas of motor and process. This will include fundamentals of anatomy and kinesiology as applied to occupational performance. This course introduces basic safe functional mobility tasks with transfers, basic assessment of sensory and motor deficits including goniometry, manual techniques such as range of motion, coordination, strength, as well as energy conservation/work simplification. Additionally, concepts of cognition and perception as related to occupation are included. Students complete clinical assessments within the role of the occupational therapy assistant (OTA). (Prerequisites: COTA1001, COTA 1050, COTA 1105, HLTH 1005; Co-requisite: COTA 1155; COTA 1270, COTA 1280, COTA 1290. This course is restricted to the following major, Occupational Therapy Assistant.) (1 credit lecture/2 credits lab)

**COTA 1270 Productive Aging and Geriatric Practice, 4 credits**

This client-centered occupation-based lecture/lab course focuses on all aspects of the occupational therapy (OT) process for older adults who may have health conditions leading to performance skill deficits. The course also addresses productive aging by accentuating maintenance of health and wellness through health promotion and prevention intervention. Emphasis is on the role of the Occupational Therapy Assistant (OTA) both in direct OT service as well as within an Activities/Recreation Department. Service delivery models, frames of reference, evidence-based practice (EBP), and documentation within this area of practice are also covered. During labs, the focus is on application of evaluation/assessment data results and developing intervention techniques using creativity and clinical reasoning skills to meet client outcomes. (Prerequisites: COTA 1001, COTA 1050, COTA 1105, HLTH 1005. Co-requisite: COTA 1155, COTA 1260, COTA1280, COTA 1290, PSYC 1406. This course is restricted to the following major, Occupational Therapy Assistant) (3 credits lecture/1 credit lab)

**COTA 1280 Mental Health and Wellness Practice, 5 credits**

This client-centered, occupation-based course focuses on all aspects of the occupational therapy (OT) process as it pertains to individual and societal mental health and wellness. This includes therapeutic use of self, trauma-informed care, disease prevention, and disease management. Emphasis is on the role of the Occupational Therapy Assistant (OTA), service delivery models, frames of reference, evidence-based practice (EBP), and documentation within this area of practice. During labs, the focus is on skills related to assessment outcomes, development and implementation of intervention techniques using creativity and clinical reasoning skills to meet client outcomes. Student self-reflection and self-assessment of skills will be applied to course content. (Prerequisites: COTA 1001, COTA 1050, COTA 1105, HLTH

1005. Co-requisites: COTA 1155, COTA 1260, COTA 1270, COTA 1290, PSYC 1406. This course is restricted to the following major, Occupational Therapy Assistant) (3 credits lecture/1 credit lab)

**COTA 1290 Level I Fieldwork Behavioral, 1 credit**

This course is a supervised occupational experience at an assigned fieldwork site coinciding with content related to mental health and wellness practice and productive aging/geriatric practice. The student will have the opportunity to observe/interact with individuals who have various physical, mental, emotional/behavioral, development, or cognitive conditions. Opportunities to develop skills through observation and communication, as well as participate in program delivery. Students may observe, communicate, and interact through inter/intra-professional team collaboration. (Prerequisites: COTA 1001, COTA 1050, COTA 1105, HLTH 1005, and current certification in CPR for the healthcare worker. Co-requisites: COTA 1270 and COTA 1280. This course is restricted to the following major, Occupational Therapy Assistant.) (0 credits lecture/0 credits lab/2 OJT)

**COTA 2310 Professional Seminar, 2 credits**

This hybrid course takes place during the last didactic semester prior to Level II fieldwork. Eight weeks are completed on campus and eight weeks are completed online. This course is meant to promote successful and ethical transition from the didactic portion of the program to Level II fieldwork and then onto professional employment. Topics covered include importance of occupational therapy (OT) professional organization membership and utilization of resources. Current professional memberships for students are required for this course. Students will apply online resources to facilitate clinical reasoning, ethical practice decision-making and evidence-based practice with professional resources. Student will create a professional resume and cover letter and will prepare for a mock interview during the concurrent Level I fieldwork experience. This course will provide information regarding certification and licensure requirements and processes for transition to future employment. (Prerequisites: COTA 1001, COTA 1050, COTA 1105, COTA 1155, COTA 1260, COTA 1270, COTA 1280, COTA 1290, HLTH 1005, PSYC 1406, PSYC 1506, SPCH 1500, and ENGL 1170 OR ENGL 2105; Co-requisite: COTA 2330, COTA 2340, COTA 2350, and COTA 2390. This course is restricted to the following major, Occupational Therapy Assistant.) (2 credits lecture/0 credits lab)

**COTA 2330 Physical Rehabilitation Practice, 4 credits**

This client-centered, occupation-base course focuses on all aspects of the occupational therapy (OT) process for people who may have physical health conditions leading to performance skill deficits. Emphasis is on the role of the Occupational Therapy Assistant (OTA) in direct OT service, including the performance of intervention planning, clinical-in-the-moment decision making, safety awareness/management, as well as inter- and intra-professional collaboration. Documentation standards for ethical and reimbursable OT services are assessed through case studies, point-of-service simulation, and lab experiences. Use of simulated electronic health record prepares students for transition to the field of physical rehabilitation practice. During labs, the focus is on demonstration of skills related to clinical reasoning, safety, assessment outcomes, and developing intervention techniques using creativity to meet client outcomes. Therapeutic use of self with self-assessment/reflection of skills will be applied to course content. (Prerequisites: COTA 1280, PSYC 1406, PSYC 1506, ENGL 1107 or 2105, SPCH 1200 or 1500, HLTH 1005. Co-requisites: COTA 2310, COTA 2340, COTA 2350, COTA 2390. This course is restricted tot the following major, Occupational Therapy Assistant.) (3 credits lecture/1 credits lab)



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### **COTA 2340 Children and Youth Practice, 4 credits**

This client-centered occupation-based course focuses on all aspects of the occupational therapy (OT) process for children and youth who may have health and/or developmental conditions leading to performance skills deficits. Emphasis is on the role of the Occupational Therapy Assistant (OTA) in the OT process, service delivery models, frames of reference, evidence-based practice (EBP), and documentation. Specific interventions related to remediation and/or compensation techniques are addressed. The course prioritizes development of treatment techniques utilizing analysis and clinical reasoning to develop creative, outcome-based interventions. (Prerequisite: COTA 1001, COTA 1050, COTA 1105, COTA 1155, COTA 1260, COTA 1280, COTA 1290, HLTH 1005, PSYC 1406, PSYC 1506, ENGL 1107 OR 2105, and SPCH 1500. Co-requisite: COTA 2310, COTA 2330, COTA 2350, and COTA 2390. This course is restricted to the following major, Occupational Therapy Assistant) (3 credits lecture/1 credit lab)

### **COTA 2350 Community Practice, 4 credits**

This client-centered occupation based practice course focuses on aspects of the occupational therapy (OT) process for persons, groups and populations within the community with an emphasis on emerging practice settings. The course also addresses maximizing health and wellness for people, groups and populations across the lifespan who may be at risk for deficits in occupational engagement. The students will apply previously learned concepts through development of programs for various ages and settings in health promotion, health literacy, community mobility, ergonomics, accessibility and driving, care coordination and transitions, and prevention techniques. Central to the course is the role of OT services and the role Occupational Therapy Assistant (OTA) within community-based settings. The business aspects of community practice such as marketing, financial management, reimbursement, federal and state legislation and regulations are introduced and incorporated in the development and implementation of programs.

The lab component of the course applies course content through individual and group presentations, service-learning opportunities and projects using frames of reference and evidence-based research. The lab component also applies course content to the development, implementation and evaluation of programming, verbal and written communication, inter/intra-professional consultation/communication, using in-person or via virtual delivery methods. (This course is restricted to the following major, Occupational Therapy Assistant). (Prerequisites: COTA 1001, COTA 1050, COTA 1105, COTA 1155, COTA 1260, COTA 1270, COTA 1280, COTA 1290, HLTH 1005, PSYC 1406, PSYC 1506, ENGL 1107 or 2105, SPCH 1500. Co-requisite: COTA 2310, COTA 2330, COTA 2340, COTA 2390.) (2 credits lecture/2 credits lab)

### **COTA 2390 Level I Fieldwork Traditional, 1 credit**

This course is a supervised occupational experience at an assigned fieldwork site coinciding with content related to coursework: Children and Youth practice, Community Practice or Physical Rehabilitation practice, Mental Health and Wellness practice and Productive Aging/ Geriatric practice. The student will have the opportunity to interact with individuals who have various physical, mental, emotional/behavioral, developmental, and cognitive conditions in practice settings supervised by an occupational therapy practitioner. Opportunities to develop skills through observation and communication, as well as participation in the OT Process. Students may observe, communicate and interact through inter/intra-professional team collaboration. (Prerequisite: COTA 1001, COTA 1050, COTA 1105, COTA 1155, COTA 1260, COTA 1280,

COTA 1270, COTA 1290, HLTH 1005, PSYC 1406, PSYC 1506, ENGL 1107 OR 2105, and SPCH 1500. Co-requisite: COTA 2310, COTA 2330, COTA 2340, and COTA 2350. This course is restricted to the following major, Occupational Therapy Assistant) (0 credits lecture/0 credits lab/1 credit OJT)

### **COTA 2411 Level II Fieldwork A, 6 credits**

This is the first of two, eight-week, full-time, supervised, Level II Fieldwork experiences, either in a medical or community setting, serving clients who have physical/psychosocial and/or developmental deficits affecting occupational performance. Supervision is provided by a registered occupational therapist and/or certified occupational therapy assistant. Emphasis is placed on developing skills/responsibilities expected of a competent entry-level occupational therapy assistant. Demonstration of entry-level skills will consist of the ability to participate in the occupational therapy (OT) process within the domain of OT; make clinical applications; demonstrate professional attributes; observe, communicate, and interact with clients, families and inter-, intra-professionals; document skilled services; and demonstrate safety. (Prerequisites: COTA 2310, COTA 2330, COTA 2340, COTA 2350, COTA 2390; a current CPR for the healthcare worker card. Co-requisites: COTA 2421. This course is restricted to the following major, Occupational Therapy Assistant) (0 credits lecture/0 credits lab/6 credits OJT)

### **COTA 2421 Level II Fieldwork B**

This is the second of two eight-week, full-time, supervised Level II Fieldwork experiences, either in a medical or community setting, serving clients who have a physical/psychosocial and/or developmental deficits affecting occupational performance. Supervision is provided by a registered occupational therapist and/or certified occupational therapy assistant. Emphasis is placed on developing skills/responsibilities expected of a competent entry-level occupational therapy assistant. Demonstration of entry-level skills will consist of the ability to participate in the occupational therapy (OT) process within the domain of OT; make clinical applications; demonstrate professional attributes; observe, communicate, and interact with clients, families and inter-, intra-professionals; document skilled services; and demonstrate safety (Prerequisites: HLTH 1005, PSYC 1406, PSYC 1506, SPCH 1500, ENGL 1107, COTA 1001, COTA 1050, COTA 1105, COTA 1155, COTA 1260, COTA 1270, COTA 1280, COTA 1290, COTA, COTA 2310, COTA 2330, COTA 2340, COTA 2350, COTA 2390; a current CPR for the healthcare worker card; co-requisite: COTA 2411. This course is restricted to the following major, Occupational Therapy Assistant)(0 credits lecture/0 credits lab/6 credits OJT)

## **Practical Nursing**

### **NURS 1400 Foundations of Nursing, 3 credits**

Foundations of Nursing introduces the student to the role of the practical nurse in health care. A theoretical foundation for basic assessment, nursing skills, and beginning framework for decision making is provided. (Prerequisites: Must be accepted into the Practical Nursing program for the current semester. Co-requisites: Current enrollment or successful completion of HLTH 1005, MATH 1010, NURS 1405, NURS 1410, NURS 1420, NURS 1430, and NURS 1440.) (3 credits lecture/0 credits lab)

### **NURS 1405 Nursing Interventions I: Lab, 2 credits**

Nursing Interventions I: Lab introduced to basic assessment and nursing skills, including techniques of administering medications and calculating dosages using critical thinking skills. (Prerequisites: Must be



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accepted into the Practical Nursing program for the current semester. Co-requisites: Current enrollment or successful completion of HLTH 1005, MATH 1010, NURS 1400, NURS 1410, NURS 1420, NURS 1430, and NURS 1440.) (0 credits lecture/2 credits lab)

#### **NURS 1410 Health Promotions Across the Lifespan I, 4 credits**

Health Promotion Across the Lifespan I examines pathophysiological conditions affecting patients from childhood to older adults. The nursing process is emphasized with the integration of the principles of therapeutic communication, nutrition and pharmacological interventions in promoting the health of patients across the lifespan. Specific emphasis includes critical thinking and nursing judgment in patient care. (Prerequisites: Must be accepted into the Practical Nursing program for the current semester. Co-requisites: Current enrollment or successful completion of HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1420, NURS 1430, and NURS 1440.) (4 credits lecture/0 credits lab)

#### **NURS 1420 Clinical Application I, 2 credits**

Clinical Application I will use the nursing process to implement safe, patient relationship-centered care to individuals across the lifespan and through the wellness-illness continuum. The assess and collection of data, implementation of skills, document of findings, and reinforcement teaching plans for individual patients is emphasized. The course assists in the development of effective communication skills while working with individual patients and interprofessional team members in a simulated lab setting with clinical application. (Prerequisites: Must be accepted into the Practical Nursing program for the current semester. Co-requisites: Current enrollment or successful completion of HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1430, and NURS 1440.) (2 credits lecture/0 credits lab)

#### **NURS 1430 Psychosocial Nursing, 1 credit**

Psychosocial Nursing focuses on the care of patients with psychiatric or behavioral conditions while promoting and maintaining the mental health of individuals. The nursing process is emphasized with the integration of the principles of therapeutic communication and pharmacological interventions in promoting the health of individual patients across the lifespan. (Prerequisites: Must be accepted into the Practical Nursing program for the current semester. Co-requisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, and NURS 1440.) (1 credit lecture/0 credits lab)

#### **NURS 1440 Nursing Perspectives on Aging, 1 credit**

Nursing Perspectives on Aging examines the unique psychological, physiological, social, and emotional aspects of human aging. Specific emphasis includes functional assessment, critical thinking, and nursing judgement in the care of the aging adult. (Prerequisites: Must be accepted into the Practical Nursing program for the current semester. Co-requisites: Current enrollment or successful completion of HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, and NURS 1430.) (1 credit lecture/0 credits lab)

#### **NURS 1500 Transition to Nursing Practice, 2 credits**

Transition to Nursing Practice facilitates the transition from student nurse to entry level practical nurse. Application of the nursing process and the use of therapeutic communication, prioritizing, decision-making, goal-setting, and critical thinking skills are emphasized through small group discussions and clinical based scenarios. Ethical, legal and moral issues, state licensure requirements and nursing practice standards for the Licensed Practical Nurse are examined. (Prerequisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410,

NURS 1420, NURS 1430, and NURS 1440. Co-requisites: Current enrollment or successful completion of ENGL 1107, NURS 1511, NURS 1515, NURS 1521, and NURS 1541.) (2 credits lecture/0 credits lab)

#### **NURS 1511 Health Promotion Across the Lifespan II, 4 credits**

Health Promotion Across the Lifespan II continues to examine pathophysiological conditions affecting patients from childhood to older adults. The nursing process is emphasized with the integration of the principles of therapeutic communication, nutrition, and pharmacological interventions in promoting the health of patients across the lifespan. Specific emphasis includes advanced critical thinking and nursing judgment in patient care. A theoretical foundation of advanced nursing skills is provided. (Prerequisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, NURS 1430, and NURS 1440. Co-requisites: Current enrollment or successful completion of NURS 1500, NURS 1515, NURS 1521, NURS 1541.) (4 credits lecture/0 credits lab)

#### **NURS 1515 Nursing Interventions II: Lab, 2 credits**

Nursing Interventions II: Lab introduces advanced nursing skills in the laboratory setting. Specific emphasis includes advanced critical thinking, nursing judgment in patient care, and the performance of advanced nursing skills. (Prerequisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, NURS 1430 and NURS 1440.) (Co-requisites: Current enrollment or successful completion of ENGL 1107, NURS 1500, NURS 1511, NURS 1521, and NURS 1541.) (0 credits lecture/2 credits lab)

#### **NURS 1521 Clinical Application II, 6 credits**

Clinical Application II will use the nursing process to implement safe, patient relationship-centered care to patients across the life span and through the wellness-illness continuum. Problem solving, prioritization, focused nursing assessments, evidenced-based nursing interventions, and critical thinking skills are demonstrated and applied. Emphasis is placed on developing leadership qualities in the provision of patient care. (Prerequisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, NURS 1430, and NURS 1440. Co-requisites: Current enrollment or successful completion of ENGL 1107, NURS 1500, NURS 1511, NURS 1515, NURS 1530, NURS 1541.) (0 credits lecture/6 credits lab)

#### **NURS 1541 Maternal Child Nursing, 2 credits**

Maternal Child Nursing provides a foundation in the care of patients during the prenatal, intrapartum, and postpartum period. The nursing care of well and compromised neonates and children will be explored. The nursing process is emphasized with the integration of the principles of therapeutic communication and pharmacological interventions in promoting the health of patients. Specific emphasis includes critical thinking and nursing judgment. (Prerequisites: HLTH 1005, MATH 1010, NURS 1400, NURS 1405, NURS 1410, NURS 1420, NURS 1430, and NURS 1440. Co-requisites: Current enrollment or successful completion of ENGL 1107, NURS 1500, NURS 1511, and NURS 1521) (2 credits lecture/0 credits lab)

### **Philosophy**

#### **PHIL 1200 (MnTC 9) Technology, Ethics and Society, 3 credits**

This course is a practical overview of the key issues and questions related to the ethical use of technology. The course will survey the major ethical theories and explore the general relationship between society's ethical standards and emerging technologies. Further inquiry will



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identify the impact technology has on current ethical and social issues surrounding such areas as information technology, healthcare, business, nanotechnology, government, artificial intelligence/robotics and whistleblowing. (Prerequisites: None) (MN Transfer Goal 9) (3 credits lecture/0 credits lab)

## Psychology

### **PSYC 1406 (MnTC 5) General Psychology, 4 credits**

This course is designed to provide students with a broad introduction to the scientific study of mental processes and behavior. Emphasis is placed on basic psychological principles and theories, both historical and modern, relevant to topics such as research methodology, biological psychology, consciousness, behavior learning, memory, intelligence, personality, social psychology, psychological disorders, and psychological therapies. (Prerequisites: None) (MN Transfer Goal 5) (4 credits lecture/0 credits lab)

### **PSYC 1506 (MnTC 5) Lifespan Development, 4 credits**

Lifespan Development addresses major theories of human development. The interdependence of physical, cognitive and social development throughout the lifespan is examined. Particular emphasis is placed on Erikson, Sears, Piaget and adult developmental research. Integration of interpersonal and written communication skills, as well as critical thinking will be included. (Prerequisites: None) (MN Transfer Goal 5) (4 credits lecture/0 credits lab)

### **PSYC 1510 (MnTC 5) Classic Studies in Psychology, 1 credit**

This course takes students through a review of psychology's major theoretical perspectives, and research methods, design, and ethical guidelines through the use of research studies published in the twentieth century. This course also examines these early research studies for their contribution to understand human behavior and the advancement of the field of psychology as a credible science. This course is intended for students who have completed an introductory psychology course. (Prerequisites: None) (MN Transfer Goal 5) (1 credit lecture/0 credits lab)

### **PSYC 1606 (MnTC 5) Abnormal Psychology, 4 credits**

This course explores the nature and causes of abnormal behavior. Emphasis is placed on the major categories used to classify abnormal behavior, along with the diagnostic criteria used. Various mental illnesses, such as depression, schizophrenia, anxiety, and eating disorders are discussed. (Prerequisites: PSYC 1406 General Psychology) (MN Transfer Goal 5) (4 credits lecture/0 credits lab)

## Quality

### **QUAL 1200 Measurement & Test Equipment, 4 credits**

This course will introduce the application for inspection practices and methods specific to manufactured components. Utilization of advanced measurement equipment including programming and execution of measurement plans related to computer-aided inspection systems and Coordinate Measurement Machines (CMM) will be covered. (Prerequisites: MACH 1121 and MACH 1132) (1 credit lecture/3 credits lab)

### **QUAL 1210 Quality Concepts & Assurance, 2 credits**

This course will provide a working knowledge of the processes and procedures standardized through International Organization for Standardization (ISO) required in a quality program. Subjects such as Quality Management Systems (QMS), documentation practices, quality pol-

icies, and industry related requirements will be covered. (Prerequisites: MACH 1121 and MACH 1132) (2 credits lecture/0 credits lab)

### **QUAL 2300 Applied GD&T Concepts, 4 credits**

This course will cover an in-dept knowledge of Geometric Dimensioning and Tolerancing (GD&T) applications. Creation of functional gauging and use of computer-aided inspection tools will be utilized to meet GD&T specifications for conformance. Students will apply and interpret situations and methods utilizing GD&T in an inspection environment as applied to production parts and meeting an inspection plan. (Prerequisites: MACH 1240) (2 credits lecture/2 credits lab)

### **QUAL 2310 Products & Process Control, 2 credits**

This course will instruct students on the handling and disposition of products based on the acceptance and discrepancy to specified standards. Processes regarding corrective action/preventative action (CAPA), quality auditing, product traceability, first article inspections (FAI), classification of discrepancies and material review boards (MRB) will be discussed. Concepts of statistical process control (SPC) will be introduced. (Prerequisites: ADSC 1171, MATH 1550, QUAL 1200, and QUAL 1210) (1 credit lecture/1 credit lab)

### **QUAL 2320 Gauging Calibration, 4 credits**

This course will cover the methodology and procedures pertaining to the verification of accuracy and precision of inspection measuring equipment. Processes of gauge adjustment and compensation, gauge R&R, qualifications, gauge standard traceability, and repeatability will be discussed. (Prerequisites: MACH 1121 and QUAL 1200) (1 credit lecture/3 credits lab)

### **QUAL 2330 Quality Ethics, 2 credits**

This course outlines ethical values necessary to uphold quality standards for consumer products. Legal, workmanship, and safety perspectives on the need for trustworthy data to be collected and reported will be presented. Cost of Quality will also be explored. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **QUAL 2340 Fixturing for Inspection, 3 credits**

This course covers fixture design aimed at holding and placement of production pieces for inspection with an emphasis on accessibility and stability. Designed fixtures will be produced and utilized within the coursework using a variety of methods including 3D printing and conventional machining methods. (Prerequisites: MACH 1090 and MACH 1231) (1 credit lecture/2 credits lab)

### **QUAL 2400 Process Performance Capability & Reliability, 2 credits**

This course will cover the concepts and tools used to identify and control processes. Inspection data at intervals in the production process will be statistically analyzed to reliably determine the frequency and causes of production discrepancies. Analyzing of data with tools including Statistical Process Control (SPC), in-process inspection sampling, variable and attribute charting, process capability, risk assessment and mitigation, confidence levels and limits, targeting, and probability will be utilized. Applied statistics and histograms will also be utilized. (Prerequisites: MATH 1550 and QUAL 2310) (1 credit lecture/1 credit lab)



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### **QUAL 2410 Validation Documentation & Regulatory Compliance, 3 credits**

This course will cover the differences and similarities between sectors of manufacturing and the requirements for documentation. Documentation procedures for a variety of regulating bodies will be explored and how these standards intertwine with global standards such as the International Standards Organization (ISO). (Prerequisites: QUAL 1210) (3 credits lecture/0 credits lab)

### **QUAL 2420 Continuous Improvement, 2 credits**

Concepts of lean manufacturing and continuous improvement within a manufacturing environment and how they affect the quality management systems will be covered in this course. Root cause analysis implementation through use of tools such as 5s, Operational Excellence, 7 Wastes, 5 Whys, Value Streaming, Fishbone diagrams, and other efficiency strategies will be explored. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **QUAL 2430 Quantitative Methods & Tools, 4 credits**

This course is designed as a culmination of the student's educational experience with quality systems. Students will create a quality system to include creating standard operating procedures, inspection plans and methods, required ancillary fixturing and equipment to be used, and calibration and documentation in place for a manufacturing project. A capstone project will be submitted. (Prerequisites: QUAL 2300, QUAL 2310, QUAL 2320, QUAL 2330, and QUAL 2340) (1 credit lecture/3 credits lab)

## **Reading**

### **READ 0900 Reading Skills, 4 credits**

Students in this course will build reading skills for success in technical programs and life-long learning. In order to improve comprehension, students will learn to identify main ideas, organizational patterns, and supporting details. Students will gain mastery over new vocabulary through using word parts, context clues, and the dictionary. In addition, students will gain an awareness of the reading process and analyze their reading and study habits. Students will apply critical reading and thinking skills to various texts, such as magazines, fiction, essays, and college textbook chapters. (Prerequisites: A score of 40 on the Accuplacer Reading Comprehension) (4 credits lecture/0 credits lab)

### **READ 0960 Preparing for College Reading, 2 credits**

This course focuses on the critical reading and thinking skills necessary to comprehend, analyze, and interpret college-level material. It also emphasizes college-study strategies within the scope of college-level reading materials. (Prerequisites: The course requires a score of 66-77 on Accuplacer Reading Comprehension. Co-requisites: This course must be taken concurrently with ENGL 0960. Students may take this course without ENGL 0960 with instructor permission) (2 credits lecture/0 credits lab)

A grade of C or higher in this course is required to register for ENGL 1107: Composition, ENGL 1110: Research Project, or ENGL 2105: Business and Technical Writing

## **Supervisory Management**

### **SMGT 1600 Management Education Planning, 2 credits**

This course guides the student through an individualized education plan for the Supervisory Management Program. Students will address their

personal and professional goals. Students will be exposed to the accelerated learning methodology. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **SMGT 1602 Supervision Fundamentals, 3 credits**

This course provides the student with current principles, concepts, responsibilities, and practical application skills fundamental to success as a supervisor. Student will participate in hands-on projects in class and at work, dealing with leadership, communication, employee motivation, delegation, planning, problem solving, organizing, and controlling. Emphasis will be on achieving organization effectiveness and individual success by working with and empowering others. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **SMGT 1604 Interpersonal Skills/Customer Service, 2 credits**

This course provides the learner with concepts and tools to learn and demonstrate interpersonal skills in the workplace. Students will identify and demonstrate skills specific to supervisory responsibilities such as providing feedback, collaborating with peers, dealing with conflict, gaining support from others, and getting ideas across. Students will learn to listen actively, discover how to give clear directions, explore the emotional barriers to effective communication and develop strategies for working with difficult situations. Principles and practices of exceptional customer service will be learned. Emphasis will be on creating a culture of making customer-focused decisions and motivating others to service excellence. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **SMGT 1606 Managing Change & Conflict, 2 credits**

This course provides students with tools and techniques to keep pace with the rapid and dramatic changes in the workplace today. Participants will learn to become a change leader by effectively identifying and overcoming resistance to change by creating a work environment where change is expected and viewed as positive. This course will focus on providing students with the tools necessary to lead their work groups through the change process. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **SMGT 1608 Personal Leadership, 3 credits**

This course will provide the student with the tools and strategies needed to increase personal productivity from which they can more effectively solve problems and develop strong personal and professional relationships. Course content includes time management, stress management, and the personal habits of effective people. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **SMGT 1610 Field Study I- Supervisory Leadership, 2 credits**

This course is designed to challenge the participant to apply the content of the Supervisory Leadership Certificate to a problem, challenge or situation in the workplace. Participants will demonstrate this application of knowledge to their classmates as well as to the course instructor. The advisor must approve the field project. Student outcomes of the field project will be designed by the student to enhance their workplace skills and must be directly related to course content in the Supervisory Leadership Certificate. (Prerequisite: None) (0 credits lecture/0 credits lab/2 credits OJT)

### **SMGT 1612 Human Resource Management, 3 credits**

This course focuses on human resource areas of the supervisor's work. Employee recruitment, selection, and orientation methods are present-



ed. Topics will include diversity, ethics, safety, and workplace violence issues, job descriptions, and labor movement and union issues. Equal employment opportunity and affirmative action programs are presented. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **SMGT 1614 Performance Management, 3 credits**

In this course, students will learn procedures for setting performance standards, measuring results, and reviewing performance with employees. Students will learn skills needed for documenting performance, and conducting performance appraisals, including planning for the review meeting, developing performance improvement plans, and conducting periodic progress reviews. Progressive discipline methods are reviewed. Coaching and constructive feedback skills are reviewed. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **SMGT 1616 Employment Law, 2 credits**

This course allows the participant to examine workplace issues impacting supervisory responsibilities such as employee hiring decisions, discrimination, unemployment compensation, worker's compensation, Fair Labor Standards Act, employee safety and health, workplace harassment, documentation and termination. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **SMGT 1618 Employee Training & Coaching, 3 credits**

This course focuses on practical application skills in developing training and conducting coaching for improved employee performance. Students will learn specific coaching strategies of tutoring, mentoring, counseling, and confronting. Student will learn how to assess training needs, design training interventions, deliver training, and evaluate impact of training programs. Adult learning principles are reviewed. Methods for transfer of training are presented. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **SMGT 1620 Work Teams & Facilitation Skills, 2 credits**

This course will focus on the practical application of supervisory skills necessary for effective team development. The dynamics of team work are presented. The practice of conducting work in teams is presented. Workforce empowerment, team communication, team development, team member styles, common team problems, and team process are reviewed. Trust and commitment are defined. Skills for planning, conducting, and evaluating effective meetings are reviewed. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **SMGT 1622 Field Study II- Human Resources, 2 credits**

This course is designed to challenge the participant to apply the content of the Human Resources Certificate to a problem, challenge or situation in the workplace. Participant will demonstrate this application of knowledge to their classmates as well as to the course instructor. The advisor must approve the field project. Student outcomes of the field project will be designed by the student to enhance their workplace skills and must be directly related to course content in the Human Resource Certificate. (Prerequisites: None) (0 credits lecture/0 credits lab/2 credits OJT)

#### **SMGT 1624 Quality Tools & Creativity, 3 credits**

In this course, students will learn methods, models, and principles of quality management in organizations. They will learn the use of multiple tools for quality and continuous improvement interventions. Methods for measuring and reporting quality improvements are reviewed. Students will use techniques to capitalize on their innate creative abilities. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **SMGT 1626 Management of Safety, 2 credits**

This course provides students with an understanding of safety and compliance regulations and guidelines set by Occupational Safety and Health Administration (OSHA), Minnesota Pollution Control Agency (MPCA), and other organizations. Worker safety rules are reviewed. Supervisory responsibilities in safety training, reporting, communication, industrial hygiene, motivation, and enforcement of policies are emphasized. Workers compensation, cost controls, accident investigation techniques, and policy development methods are presented. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **SMGT 1628 Documentation/Written Communication Skills, 2 credits**

This course provides students with the skills necessary for supervisors to effectively and accurately document employee performance and communicate with employees using a variety of written formats. The course emphasizes the importance of determining the "who, what, where, when, and why" of workplace issues, so that they are documented accurately and completely. Providing written performance feedback, conducting workplace investigations, preparing formal reports, and documenting disciplinary incidents are covered. (Prerequisites: None) (2 credits lecture/0 credits lab)

#### **SMGT 1630 Field Study III, 2 credits**

This course is designed to challenge the participant to apply content of the Quality Certificate to a problem, challenge or situation in their workplace. Participants will demonstrate this application of knowledge to their classmates as well as to the course instructor. The advisor must approve the field project. Student outcomes of the field project will be designed by the student to enhance their workplace skills and must be directly related to course content in the Quality Certificate. (Prerequisites: None) (0 credits lecture/0 credits lab/2 credits OJT)

#### **SMGT 2600 Accounting for Non-Financial Managers, 2 credits**

This course provides students with the financial management planning tools and control methods necessary for supervisors. The supervisory roles of budgeting, forecasting, cost containment, and budget management are covered. Fiscal decision making methods are reviewed. Planning and control practices are presented. (Prerequisite: None) (2 credits lecture/0 credits lab)

#### **SMGT 2602 Project Management/Problem Solving, 3 credits**

This course focuses on how to lead project teams and problem solving interventions. The student will learn how to lead teams through problem solving process. The course focuses on project management preparation, the use of project management tools, and how to manage complex projects with specific starting and ending points. Emphasis is on managing projects with multiple simultaneous activities and dimensions. (Prerequisites: None) (3 credits lecture/0 credits lab)

#### **SMGT 2604 Leadership Development, 2 credits**

This course provides the student with leadership methods, concepts, and tools to enhance and improve the ability to inspire and influence others. Emphasis is on leading others by creating positive and powerful relationships based on principles and values. The student will complete a personal leadership action plan. (Prerequisites: None) (2 credits lecture/0 credits lab)



## Social Science

### **SOSC 1010 (MnTC 5, 7) Introduction to Sociology, 3 credits**

This course is an introduction to sociology as a way of understanding the world. Sociology is a field of study that explains social, political, and economic phenomena in terms of social structures, social forces, and group relations. The course will introduce students to the field by focusing on several important sociological topics, including socialization, culture, the social construction of knowledge, inequality, race and ethnic relations, poverty, and political sociology. (Prerequisites: None) (MN Transfer Goal 5,7) (3 credits lecture/0 credits lab)

### **SOSC 2000 (MnTC 5) Sociology of Work, 4 credits**

Introduction to social science through studying how people work. Articles from several disciplines will be studied including those from economics, history, sociology, and others. Topics discussed will include the work ethic, changing roles of men and women in the work force, unionism, moving from agrarian to industrial to information societies, globalization and effects on leisure time. (Prerequisites: None) (MN Transfer Goal 5) (4 credits lecture/0 credits lab)

## Speech

### **SPCH 1120 (MnTC 1) Public Speaking, 3 credits**

This is an introductory speech course that focuses on the process of formal public speaking, with emphasis on comfortable and effective delivery of speeches. This course is designed to provide students with basic theories and skills that are essential to effective public speaking. Students will deliver both informative and persuasive speeches in a variety of public speaking situations. Each student will also learn to analyze, critique, and evaluate the speeches of others. Videotaping and self-assessment are integral components of this class. Additional course work will include studying the group process, impromptu speaking, and dramatic reading. This course depends on student performance and active participation. (Prerequisites: None) (MN Transfer Goal 1) (3 credits lecture/0 credits lab)

### **SPCH 1200 (MnTC 1, 7) Interpersonal Communication, 3 credits**

This course is designed to facilitate an understanding of the communication context, concepts, and skills involved in day-to-day interaction. Emphasis is on such topics as awareness, self-concept, perception, attitude, cultural differences and similarities, and relational and self-development. This course focuses on developing communication understand, including language, speaking, non-verbal communication, conflict resolution, male-female communication, and listening techniques. (Prerequisites: None) (MN Transfer Goals 1 & 7) (3 credits lecture/0 credits lab)

### **SPCH 1500 (MnTC 1, 7) Intercultural Communication, 3 credits**

Speaking the same language does not guarantee effective communication when people come from different cultures. Increasing diversity in the workplace combined with the globalization of business require professionals to become better communicators across cultures. This course provides training in understanding the importance of intercultural communication and theories. Topics covered include: definitions of communication; definitions of culture and diversity of cultural patterns; cultural variables influencing communication, such as language, non-verbal behavior, perception, values, and beliefs; factors that facilitate or inhibit intercultural communication; and examination of American culture in comparison to other cultures. (Prerequisites: None) (MN Transfer Goals 1 & 7) (3 credits lecture/0 credit lab)

## Surgical Technology

### **SURG 1003 Sterile Processing, 3 credits**

The course will introduce various surgical instruments, the classification and use(s), including the process of cleaning, decontamination, disinfection, and sterilization of equipment and supplies used in the surgical services department. Distribution and management of supplies to all customer service areas is also addressed for health care settings. (Prerequisites: HLTH 1040 and BIOL 2100, Co-requisites: SURG 1005 and BIOL 2200) (2 credits lecture/1 credit lab)

### **SURG 1005 Surgical Microbiology, 2 credits**

This course addresses natural and artificial body defense mechanisms and the methods by which infectious diseases are recognized, treated, transmitted, and prevented. Disinfection and sterilization are also included. Content covers the application of aseptic technique and various environmental controls. (Prerequisites: HLTH 1040 and BIOL 2100) (Co-requisites: SURG 1003 and BIOL 2200) (2 credits lecture/0 credits lab)

### **SURG 1010 Surgical Pharmacology, 2 credits**

This course is designed to provide knowledge of various routes of drug administration, effects, and side effects. It will encompass a comprehensive knowledge of the many classifications of drugs. Also included will be instruction in the values for fluid and weight measures. Emphasis will be placed on legal and safety aspects of drug administration including a medication policy. (Prerequisites: None) (2 credits lecture/0 credits lab)

### **SURG 1026 Operating Room Theory, 2 credits**

Operating Room Theory will introduce concepts related to the surgical experience. Theory includes safe patient care, principles of aseptic technique, professional standards in the operating room environment and the perioperative process. (Prerequisites: Successful completion of the Sterile Processing certificate) (2 credits lecture/0 credits lab)

### **SURG 1027 Operating Room Techniques, 4 credits**

Operating Room Techniques teaches the basic practical concepts, principles, skills, and professional standards required for clinical practice. This course must be completed the semester prior to clinical. (Prerequisites: None) (Co-requisites: SURG 1010, SURG 1026 and SURG 1035) (0 credits lecture/4 credits lab)

### **SURG 1035 Operating Room Procedures I, 4 credits**

This course introduces concepts of basic procedures performed in the operating room. Included will be anatomy, illness/abnormalities, instrumentation, and the perioperative process. (Prerequisites: None) (Co-requisites: SURG 1010, SURG 1026 and SURG 1027) (3 credits lecture/1 credit lab)

### **SURG 1037 Operating Room Procedures II, 4 credits**

This course will expand the concepts and procedures addressed in SURG 1035, OR Procedures I. Included will be anatomy, illness/abnormalities, instrumentation, and the perioperative process. (Prerequisites: SURG 1005, SURG 1010, SURG 1026, SURG 1027, and SURG 1035) (Co-requisites: SURG 2000) (4 credits lecture/0 credits lab)

### **SURG 2000 Operating Room Clinical, 16 credits**

In this clinical laboratory course, the student will assist with selected procedures in a hospital setting. The course will implement skills learned in prior Surgical Technology theory and laboratory courses.



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(Prerequisites: Successful completion of SURG 1010, SURG 1026, SURG 1027 and SURG 1035) (Co-requisites: SURG 1037) (0 credits lecture/16 credits lab)

## Welding

### **WELD 1000 Blueprint Reading I- Lecture, 1 credit**

This course covers basic lines, basic views, title block information, notes and specifications, dimensions, structural shapes, auxiliary views, section views, detailed and assembly prints, and welding symbols blueprint information. (Prerequisites: None; Co-requisites: WELD 1001, WELD 1002, WELD 1004, WELD 1006, 1012, WELD 1014, WELD 1018, WELD 1020, and WELD 1021) (1 credit lecture/0 credits lab)

### **WELD 1001 Blueprint Reading I- Lab, 1 credit**

Application of blueprint reading will be used to weld fabrication projects which include use of Gas Metal Arc Welding (GMAW), shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Oxy-fuel cutting and brazing. (Prerequisites: None; Co-requisites: WELD 1000, WELD 1002, WELD 1004, WELD 1006, WELD 1012, WELD 1014, WELD 1018, WELD 1020, and WELD 1021) (0 credits lecture/1 credit lab)

### **WELD 1002 Math for Welders, 1 credit**

Math skills are essential for welder who read blueprints, layouts, fit-up, fabricate or design welded structures. This course will review the basic math concepts required to be a successful welder. Topics covered will include addition, subtraction, multiplication and division of whole numbers, fractions and decimals. Direct measurement, computed measurement and stretch-outs are also included. (Prerequisites: None) (1 credit lecture/0 credits lab)

### **WELD 1004 Oxy-Fuel Applications, 1 credit**

This course focuses on the hand skills, safety, and knowledge needed to be proficient with oxy-fuel brazing and oxy-fuel cutting processes. Also covered are oxy-fuel track cutting, carbon arc gouging, plasma cutting and gouging. (Prerequisites: None, Co-requisites: WELD 1006) (0 credits lecture/1 credit lab)

### **WELD 1006 Oxy-Fuel Processes, 1 credit**

This course focuses on Oxy-Fuel safety and background knowledge needed to be proficient with oxy-fuel brazing and oxy-fuel cutting processes. (Prerequisites: None; Co-requisites: WELD 1004) (1 credit lecture/0 credits lab)

### **WELD 1012 Processes & Power Sources I, 3 credits**

This course covers the basic terminology, fundamentals, design and application of welding processes and power sources. (Prerequisites: None) (3 credits lecture/0 credits lab)

### **WELD 1014 Gas Tungsten Arc Welding I, 3 credits**

This course focuses on the Gas Tungsten Arc Welding (GTAW) process, welding carbon and stainless steel fillet and groove welds in all positions. Gas Tungsten Arc Welding knowledge and safety are also covered. (Prerequisites: None ; Co-requisites: WELD 1012) (0 credits lecture/3 credits lab)

### **WELD 1018 Shielded Metal Arc Welding I, 3 credits**

This course covers hands on training utilizing the Shielded Metal Arc Welding (SMAW) process with 610 and 7018 filler metals on carbon steels in various positions. Shielded Metal Arc Welding knowledge and safety and process variables are also covered. (Prerequisites: None; Co-requisites: WELD 1012) (0 credits lecture/3 credits lab)

### **WELD 1020 Gas Metal Arc Welding I-A, 1 credit**

This course covers hands-on training with the Gas Metal Arc Welding (GMAW) process, using short circuit transfer. Welds will be done in the flat, horizontal and vertical positions. (Prerequisites: None; Co-requisites: WELD 1000, WELD 1001, WELD 1002, WELD 1004, WELD 1006, WELD 1012, WELD 1014, WELD 1018, and WELD 1021) (0 credits lecture/1 credits lab)

### **WELD 1021 Gas Metal Arc Welding I-B, 2 credits**

This course covers hands-on training with the Gas Metal Arc Welding (GMAW) process, using short-circuit transfer, spray transfer and pulse-spray transfer on carbon steels. Gas Metal Arc Welding safety and variables are also covered. (Prerequisites: None; Co-requisites: WELD 1000, WELD 1001, WELD 1002, WELD 1004, WELD 1006, WELD 1012, WELD 1014, WELD 1018, and WELD 1020) (0 credits lecture/ 2 credits lab)

### **WELD 1022 Blueprint Reading II, 3 credits**

This course covers and builds the hands-on skills that are essential to fabricate weldments from blueprints with multiple welding processes. The hands on course approach, teaches students how to visualize blueprints by actually building welding projects from them. Students will start by fabricating projects from very simple blueprints, while each blueprint the student receives will get more challenging. All blueprints will be introduced by the instructor. (Prerequisites: WELD 1008, Co-requisites: WELD 1028, WELD 1034, and WELD 1036) (1 credit lecture/2 credits lab)

### **WELD 1024 Metals Theory I, 2 credits**

This course cover history of metals, everyday metal we use, metal testing methods, basics of metallurgy, mechanical properties, physical properties, and welding low, medium, and high carbon steels. (Prerequisites: WELD 1012) (2 credits lecture/0 credits lab)

### **WELD 1026 Process and Power Source II, 3 credits**

This course covers processes such as Flux Core Arc Welding (FCAW) self-shielded and externally-shielded, Submerged Arc Welding (SAW), and Gas Metal Arc Welding (GMAW) of aluminum and stainless steel. Pulse spray vs. Pulse on Pulse welding setup and use is discussed as well as advanced Shielded Metal Arc Welding (SMAW) practices for plate welding. Inverter power source design function and application along with process consumables and shielding mediums will also be covered. (Prerequisites: WELD 1012) (3 credits lecture/0 credits lab)

### **WELD 1028 Gas Tungsten Arc Welding II, 3 credits**

This course covers the Gas Tungsten Arc Welding (GTAW) process, welding aluminum fillet and groove welds in all positions. Gas Tungsten Arc Welding knowledge and safety are also covered. (Prerequisites: WELD, 1002, WELD 1004, WELD 1006, WELD 1008, WELD 1012, WELD 1014, WELD 1016, AND WELD 1018) (0 credits lecture/3 credits lab)

### **WELD 1034 Gas Metal Arc Welding II, 3 credits**

This course covers hands-on training utilizing the Gas Metal Arc Welding (GMAW) process on stainless steel and aluminum fillet welds and Flux Cored Arc Welding (FCAW) on carbon steel. Gas Metal Arc Welding safety, knowledge, and variables are also covered. (Prerequisites: WELD 1002, WELD 1004, WELD 1006, WELD 1008, WELD 1012, WELD 1014, WELD 1016, and WELD 1018) (0 credits lecture/3 credits lab)



**WELD 1036 Shielded Metal Arc Welding II, 3 credits**

This course covers hands-on training utilizing 6010 and 7018 filler metals on carbon steels with the Shielded Metal Arc Welding (SMAW) process. This course starts in the vertical position on fillet joints and then concentrates on 1G, 2G, 3G, and 4G plates without backing strips. Backing strips will be used only as required. (Prerequisites: WELD 1002, WELD 1004, WELD 1006, WELD 1008, WELD 1012, WELD 1014, WELD 1016, and WELD 1018) (0 credits lecture/3 credits lab)

**WELD 1209 Basic Pipe Welding, 5 credits**

This course focuses on the Shielded Metal Arc Welding (SMAW) of carbon steel pipe in the horizontal position using E6010 and E7018 electrodes. The focus of this course will be preparing for an American Welding Society (AWS) qualification test on pipe in the 2G position. The course covers 6010 open root passes with fill and cover passes being made with both 6010 and 7018 electrodes. (Prerequisites: WELD 1022, WELD 1024, WELD 1026, WELD 1028, WELD 1034, and WELD 1036) (1 credit lecture/4 credits lab)

**WELD 2000 Basic Pipe Layout, 3 credits**

The focus of this course will be basic pipe layout techniques. Students will learn to level, quarter mark, cut, fit, and weld basic pipe joints in various positions from hand drawn templates. Cutting techniques will concentrate on manual Oxy-Fuel Cutting (OFC) pipe joints for accurate fit-up. Each pipe joint will be welded and inspected to meet visual inspection criteria. (Prerequisites: WELD 1022, WELD 1024, WELD 1026, WELD 1028, WELD 1034, and WELD 1036) (2 credits lecture/1 credit lab)

**WELD 2004 Metals Theory II, 3 credits**

This course will cover basic metallurgy of Stainless Steel and Aluminum. Focus will be on the different alloys and the weldability of each alloy. Welding procedures and repair procedures will be discussed for carbon steel, titanium, and cast iron. (Prerequisites: WELD 1022, WELD 1024, WELD 1026, WELD 1028, WELD 1034, and WELD 1036) (3 credits lecture/0 credits lab)

**WELD 2006 Welding Code Interpretation, 2 credits**

This emphasis of this course covers information and interpretation of American Welding Society (AWS) D1.1 Welding Code. American Society of Mechanical Engineers (ASME) Section IX and American Petroleum Institute (API) Standard 1104 are covered briefly. Welding procedure qualification, welder performance qualification, and extent of welder qualification are examined and developed. Joint design, inspection and testing of welds, welding variables will also be covered. (Prerequisites: Must be accepted into one of the following programs Welding AAS, Robotic and Laser Welding AAS or certificate, or Welding Fabricator certificate.) (2 credits lecture/0 credits lab)

**WELD 2008 Blueprint Reading III, 4 credits**

This course will cover the setup and use of laser cutting and laser cut parts for blueprint projects. It will also introduce robotic welding and apply weld procedures to basic weld joints. It improves visualization skills and refines the advanced hand and layout skills essential for fabrication of weldments. Students will use advanced and intricate blueprints to fabricate projects from a variety of base metals using the Gas Metal Arc Welding (GMAW) and Gas Tungsten Arc Welding (GTAW) process. Welding symbols and various welding processes will also be employed. (Prerequisites: WELD 1022, WELD 1024, WELD 1026, WELD 1028, WELD 1034, and WELD 1036) (0 credits lecture/4 credits lab)

**WELD 2012 GMAW 5G and 6G Pipe Welding, 2 credits**

This course covers hands on training utilizing the Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW) process on carbon steel pipe. The course focus will be on open root, fill, and cover passes in the 5G and 6G positions. Guided bend test will meet American Welding Society (AWS) D1.1 visual inspection criteria. (Prerequisites: WELD 1209, WELD 2000, WELD 2004, WELD 2006, and WELD 2008) (0 credits lecture/2 credits lab)

**WELD 2014 GTAW 5G and 6G Pipe Welding, 5 credits**

This course covers hands-on training utilizing the Gas Tungsten Arc Welding (GTAW) process on carbon steel pipe. The focus of this course will be open root passes made in the 5G and 6G positions with GTAW while fill and cover passes will use walking the cup technique and also be made with Shielded Metal Arc Welding (SMAW) using 7018. American Welding Society (AWS) welding procedures will be used to evaluate welds. (Prerequisites: WELD 1209, WELD 2000, WELD 2004, WELD 2006, and WELD 2008) (0 credits lecture/5 credits lab)

**WELD 2016 SMAW 5G & 6G Pipe Welding, 5 credits**

This course covers hands-on training, utilizing 6010 and 7018 filler metals on carbon steel pipe with the Shielded Metal Arc Welding (SMAW) process. The focus of this course will be on 6010 open root passes with fill and cover passes being made with both 6010 and 7018 electrodes in the 5G and 6G positions. Pipe beveling will be completed by machining pipe coupons on lathe. The focus of this course will be preparing for an American Welding Society (AWS) qualification test on pipe in the 5G or 6G positions. (Prerequisites: WELD 1209, WELD 2000, WELD 2004, WELD 2006, and WELD 2008) (0 credits lecture/5 credits lab)

**WELD 2018 Blueprint Reading IV, 5 credits**

This course will develop design and cost estimates to build a fabrication project. Working individually and in teams, students will design and build welded projects. Cost estimates will be discussed and compared base on design requirements. (Prerequisites: WELD 1209, WELD 2000, WELD 2004, WELD 2006, and WELD 2008) (0 credits lecture/5 credits lab)

**WELD 2100 Laser Cutting, 2 credits**

This course is an introduction to laser cutting. The focus is on laser safety, laser programming, and laser cutting fundamentals. Lab work will include creating programs and programming of laser for welding. (Prerequisites: Must be accepted into the one of the following programs Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2140, WELD 2110, WELD 2120, WELD 2130, and WELD 2150)

**WELD 2110 Laser Welding, 4 credits**

This course is an introduction to laser welding. The focus is on laser safety, theory of laser welding, and laser fundamentals. Lab work will include creating weld procedures and programming of laser for welding. (Prerequisites: Must be accepted into the one of the following programs: Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2100, WELD 2120, WELD 2130, WELD 2140, and WELD 2150) (2 credits lecture/2 credits lab)

**WELD 2120 Welding Procedures, 1 credit**

This course is an introduction to weld procedure development. The focus is on documentation of procedure qualification and writing weld procedures. Lab work will include, but is not limited to, creating pro-



cedures for robotic and laser welding. (Prerequisites: Must be accepted into the one of the following programs: Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2100, WELD 2110, WELD 2130, WELD 2140, and WELD 2150) (0 credits lecture/1 credit lab)

**WELD 2130 Fanuc Robotic Welding, 3 credits**

This course covers the Fanuc robot controller and welder. The focus will be weld safety, Fanuc program language, and robot operation. Labs will include creating programs, editing programs, controlling motion, and performing welds. American Welding Society (AWS) visual acceptance criteria will be used to evaluate welds. (Prerequisites: Must be accepted into the one of the following programs: Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2100, WELD 2110, WELD 2120, WELD 2140, and WELD 2150) (1 credit lecture/2 credits lab)

**WELD 2140 ABB Robotic Welding, 3 credits**

This course covers the ABB robotic controller and welder. The focus will be on weld safety, ABB program language, and robot operation. Labs will include creating programs, editing programs, controlling motion, and performing welds. American Welding Society (AWS) visual acceptance criteria will be used to evaluate welds. (Prerequisites: Must be accepted into the one of the following programs: Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2100, WELD 2110, WELD 2120, WELD 2130, and WELD 2150) (1 credit lecture/2 credits lab)

**WELD 2150 OTC Robotic Welding, 3 credits**

This course covers the OTC robot controller and welder. The focus will be on weld safety, OTC program language, and robot operation. Labs will include creating programs, editing programs, controlling motion, and performing welds. American Welding Society (AWS) visual acceptance criteria will be used to evaluate welds. (Prerequisites: Must be accepted into the one of the following programs: Robotic and Laser Welding AAS or certificate; Co-requisites: WELD 2006, WELD 2100, WELD 2110, WELD 2120, WELD 2130, and WELD 2140) (1 credit lecture/2 credits lab)

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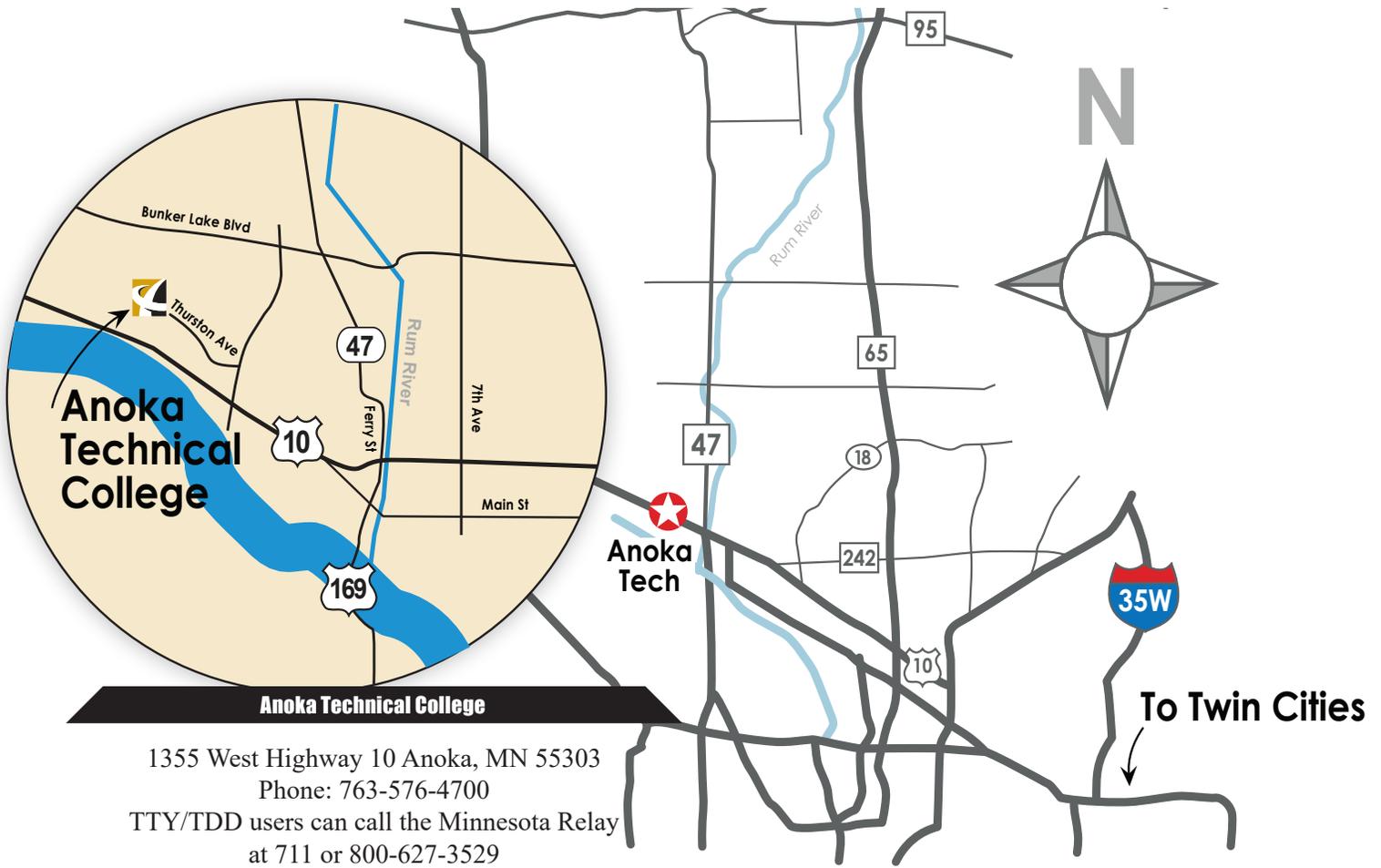
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# Campus Locations & Directions



**Anoka Technical College**  
1355 West Highway 10 Anoka, MN 55303  
Phone: 763-576-4700

TTY/TDD users can call the Minnesota Relay  
at 711 or 800-627-3529

## Directions

### From the West

Travel north on Highway 169 to Highway 10 west

Turn north at Thurston Avenue (It is not marked well. It is a controlled intersection). Take an immediate left at the first stop sign. Follow the frontage road north (left). The frontage road leads directly to the parking.

### From the East

Travel north on Highway 35E

Go west on Highway 694. Take the Highway 10 exit to Anoka (Remain in the right lane as the road becomes a “Y”). Remain in the right lane for another five minutes, as Highway 10 veers to the right again and ultimately takes a big swing to the west. Turn north at Thurston Avenue (It is not marked well. It is a controlled intersection). Take an immediate left at the first stop sign. Follow the frontage road north (left). The frontage road leads directly to the college parking lot.

### From Twin Cities

Travel west on Interstate 94

Take Highway 252 North. Choose East Highway 610. Minnesota Highway 610 intersects with Highway 10. Take Highway 10 West to Anoka. Turn north at Thurston Avenue It is not marked well. It is a controlled intersection). Take an immediate left at the first stop sign. Follow the frontage road north (left). The frontage road leads directly to the college parking lot.



Maps also available online at:  
[AnokaTech.edu](http://AnokaTech.edu)



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# **ANOKA**

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