



CAREER & TECHNICAL EDUCATION COURSE CATALOG

2024-2025 Course Catalog



CAREER & TECHNICAL EDUCATION

FREE TRANSPORTATION TO AND FROM YOUR HIGH SCHOOL

CTE in MPS...

CTE courses provide an opportunity to connect what you are learning in your core classes (math, science, language arts, social studies) through career-connected, hands-on projects; build your resume and develop real skills for the real world.

CTE courses allow you to explore a wide variety of careers and related professional skills as you:

- define your career aspirations,
- earn college credit,
- develop industry recognized skills,
- outline your plans beyond high school graduation, and
- prepare for what comes next!

11th & 12th grade students may enroll in any in-person and online CTE course.

10th grade students may enroll in any online course 1st semester, and both online or in-person courses 2nd semester.

9th grade students may enroll in course 99201 – Investigating careers (see page 4) which will help you identify your interests in taking additional CTE courses in 10th, 11th, or 12th grade and determine if you are interested in pursuing the Int'l Baccalaureate Career Programme certificate.

Each CTE course you take will replace one or two class periods during your school day.

- Students can take an online CTE course any hour of the day. Most online CTE courses equal 0.5 high school credit. Online courses are indicated by “AO” in their registration code.
- Students who enroll in a block of courses at a Tech Center will be provided free roundtrip transportation to and from their classes. A blocked course taken at a Tech Center equals 1.0 high school credits.

Proposed 2024–2025 CTE Tech Center Bell Schedule

Free breakfast is available at each Tech Center, 7:35–8:00 a.m. All students eat lunch at their home high school.

7:25 – 8:00 a.m. Free Transportation Shuttle available from your high school – pickup times vary by site.

A.M. Block Classes | 8:05 – 10:00 a.m.

10:05–10:35 a.m. Free Transportation back to high schools

Mid-day Classes | Between 10:05 a.m. – 1:00 p.m. *Times vary at each Tech Center*

12:15–1:00 p.m. Free Transportation Shuttle available from your high school – pickup times vary by site.

P.M. Block Classes | 1:05 – 3:00 p.m.

3:05 – 3:45 p.m. Free Transportation Shuttle back to high schools.



Find the right courses for you...

Step 1: Review course offerings in this catalog

Learn more about CTE & the I.B.Career Programme	...Page 2
Career Exploration	...Page 5
Agriculture	...Page 6
Business	...Page 7
Urban Education	...Page 8
Law & Public Safety	...Page 9
Healthcare	...Page 10
Computer Science	...Page 12
Media Arts	...Page 14
Engineering	...Page 16
Robotics & Drone Technology	...Page 17
Automotive	...Page 18
Construction & Welding	...Page 19
Machine Technology @ South High in SY2024-2025	...Page 20

Step 2: Identify the courses that interest you

Step 3: Select your courses at ctecoursefinder.mpls.k12.mn.us

When you submit your course choices using the CTE Course Finder Tool your high school counselor will automatically be informed of your interest and help you complete the official registration process.

Additional information:

- All CTE courses count as elective credit toward high school graduation requirements. Some CTE courses also count toward your Art or Science graduation requirement.
- Many CTE courses are eligible for college credit. If a course is eligible for college credit it is indicated in the chart on each page.
- Course locations are identified in the chart on each page. Options include in-person at a CTE Tech Center, online or in a few instances at non-CTE Tech Center locations.
- Annual course offerings will be based on student interest and enrollment numbers.

10 Reasons



why the IB Career-related Programme (CP) is the ideal study for students looking to pursue a range of pathways

1



It encourages you to think about others

The service learning course allows you to make a positive difference to the world around you.

2



Explore, understand and engage in real world issues

The CP requires you to explore, analyse and evaluate global issues from a local perspective.

3



It integrates academic and practical learning

The CP combines academic rigour with practical study; and develops skills and competencies required for life-long learning.

4



It allows you to do what you really want to do

You can combine your academic subjects with your interests and skills.

10



Become an independent learner

Taking part in the reflective project, you learn how to research subjects and explore multiple sources of information.

6



Learn about different cultures

Language development encourages you to engage with other cultures and increase your understanding of the wider world.

5



It gives you more career options

With a CP, you can access further education, apprenticeships and employment in areas such as business, IT, health care, sports and many others.

9



Develop essential life skills

Skills including critical thinking, communication and personal development are an important focus of the CP.

7



Build friendships and connections

Collaborative projects allow you to build friendships as well as working relationships.

8



Explore and apply your creativity in innovative ways

Personal and professional skills courses promote creative thinking techniques.



International Baccalaureate®
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www.ibo.org/cp

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IB Career-related Programme

Locally prepared. Globally minded.

Enroll today!

Contact the IBCP coordinator at your high school or email cteinfo@mpls.k12.mn.us.

Career-related Programme



This program is available to all interested 11th and 12th grade students at MPS IB High Schools.

The IB Career-related Programme (IBCP) is a collection of rigorous, college-level Career and Technical Education courses and IB Diploma Programme courses.

This program provides students the opportunity to develop industry-recognized skills, earn college credit/certificates, and further their education as they prepare for high tech, high wage, in-demand careers.

Choose from 15 Career Pathways

- Agriculture
- Automotive Tech & Collision Repair
- Business Entrepreneurship & Marketing
- Computer Science
- Construction
- Cybersecurity
- Education
- Engineering
- Healthcare
- Law & Public Safety
- Machine Technology
- Media Arts
- Robotics & Drone Technology
- Welding
- & many other opportunities aligned with local colleges and MPS community partners based on student interest

In addition to taking 1.5 credits of CTE coursework related to a career of interest, IBCP students must complete the following courses during 11th & 12th grade to earn their IBCP certificate.

- Two or more IB Diploma Programme courses
- A world language course or independent study
- 50 hours of Service Learning
- Reflective Project
- CTE course, 99204 IB Personal & Professional Skills (see page 4)



Not sure what CTE course is right for you?

Scan the QR code to learn about CTE courses
and career pathways that best match
your personality, interests and strengths.

START EXPLORING TODAY.



ctecoursefinder.mpls.k12.mn.us

**CAREER
& TECHNICAL
EDUCATION**

Career Exploration

DISCOVER. PREPARE. ACHIEVE.



Still making plans for what you want to do after high school? Connect what you are learning in high school to real world experiences and career options that align best with your interests and natural abilities. Develop employability skills needed to succeed in the workplace and explore careers and skills needed to enter the industry of your choice.

Available in-person or online @ your high school

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
99201	Investigating Careers (Available to 9th graders)	No	.5	Elective	No

Design your future and make plans for life after high school graduation! In this course you will create a personal portfolio aligned with your career aspirations—research current and future career trends; discuss on-the-job health/safety issues and employer-employee relations; identify personal, work, and lifestyle values; and create a professional resume.

This course is a prerequisite for course 99205.

99203	Career Planning & Development	No	.5	Elective	No
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Explore your career interests! This project-based course builds on prior knowledge and life experiences to guide you through the process to set career and college readiness goals aligned with your personal career aspirations. Modeled after independent-study courses, you will work with your instructor and community partners to create a project plan that outlines the activities, tasks and research you will do to further develop your skills and knowledge in a specific career field.

99204	IBCP Personal & Professional Skills	No	.5	Elective	No
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Are you an IBCP student? This is a required IBCP course and provides mentoring and class time to to organize and complete the Reflective (career research) Project and work on their Language Portfolio. Develop skills in organization, communication, collaboration, reflection, ethical decision making, cultural awareness, and information literacy in the workplace.

99205	Career Work Experience (11th and 12th grade only)	99201	.5	Elective	No
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Earn while you learn! Connect what you are learning in school through paid and unpaid work experiences out in the community. Build resume-worthy experiences and solidify your career interests. All work experiences will be monitored by an MPS work-based learning teacher and be aligned to Minnesota Department of Education requirements and prerequisites. You must be 16 years old to enroll in this course.



Interested in exploring career options or a school-year internship?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Urban Agriculture

PLANT. GROW. HARVEST.



Explore the vibrant natural world, right here in the city. Learn how plants and soil are integral to human health and life. Solve problems of food access in your community. Discover all of this and more in Urban Agriculture classes.

CTE | Edison Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
90101 90201	Urban Agriculture Plant Science & Horticulture	No	1.0	Elective	Yes

90101 Urban Agriculture – 90101

Explore emerging technologies and learn how urban agriculture, food science, and natural resources are revolutionizing how we design and manage local community-based food production. Plus, build a personal portfolio and resume showcasing your knowledge and employability skills in preparation for a local internship.

Plant Science & Horticulture – 90201

Develop skills to grow plants in a variety of settings, landscape design, and maintenance. Learn how urban agriculture and landscaping are driven by plant science, the environment, and resources of our local community.

CTE | Online

No transportation required – courses offered at your high school any period of the day.

90101AO	Urban Agriculture	No	.5	Elective	Yes
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Explore emerging technologies and learn how urban agriculture, food science, and natural resources are revolutionizing how we design and manage local community-based food production. Plus, build a personal portfolio and resume showcasing your knowledge and employability skills in preparation for a local internship.

90201AO	Plant Science & Horticulture	90101	.5	Elective	Yes
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Develop skills to grow plants in a variety of settings, landscape design, and maintenance. Learn how urban agriculture and landscaping are driven by plant science, the environment, and resources of our local community.



Interested in learning how to grow food in the big city?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Business

PLAN. ORGANIZE. INVEST. PRODUCE.



Interested in running your own business or climbing the corporate ladder? Learn to use your analytical, entrepreneurial, and leadership skills to write a successful business plan, market a new idea, dig into data, manage teams, and develop project management skills that will support any future career choice.

CTE | Edison Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
93511 93711	Entrepreneurship Principles of Marketing	No	1.0	Elective	Yes

Entrepreneurship – 93511

Ever thought of running your own business? Learn how to research the potential success of your business idea, write a business plan, and keep accurate records. Topics include accounting, marketing, human resources, insurance, financial management, banking and evaluate the costs and benefits of an entrepreneurial venture.

Principles of Marketing – 93711

Learn how to successfully advertise and market products to a customer. Learn the basic concepts of marketing, product development, pricing strategies, channels of distribution, promotion, and buyer behavior. Increase your social awareness as you analyze and define a market need, conduct research and develop a market strategy that addresses product, price, place, and promotion.

91056 91646	Data Science 1 Data Science 2	No	1.0	Elective	Yes
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Data Science 1 – 91056

Learn how to capture data and use it to share powerful messages! In this course students will utilize Microsoft Excel to manage data associated with real-world issues, perfecting their skills to analyze, understand and represent facts through data.

Data Science 2 – 91646

Look for unseen patterns in existing data! In this advanced course continue your exploration of vast volumes of data using modern tools and techniques to find unseen patterns, derive meaningful information, and make business decisions.

93739	IB Business and Management SL	No	1.0	Elective (IB)	Yes
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Explore complex and dynamic global business practices! Use business management theories and case studies to explore business functions of human resource management, finance and accounts, marketing and operations management through the lens of culture, ethics, globalization, innovation and strategy. You do not need to be an IB student to take this course.

CTE | Online

No transportation required – courses offered at your high school any period of the day.

93301AO	Personal Finance	No	.5	Elective	No
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Personal Finance – 93301AO

Learn how to manage your money. This course focuses on personal and family resource management. Learn how to create a realistic household budget, plan for unexpected financial events, evaluate financial and banking services, design an investment portfolio, and complete personal income tax forms. Great preparation for living on your own!

93506AO	Intro to Business	No	.5	Elective	Yes
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Intro to Business – 93506AO

Take the first step in understanding what it takes to run a successful business. This class will explore business ownership, ethics, decision-making, and business from a local and global perspective through hands-on projects and business simulations.

Interested in Business classes?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Urban Education

INSPIRE. ENGAGE. SUPPORT.



Explore all aspects of urban education while you work with MPS teachers and students. Design lesson plans and engage with kids. Be an influencer! Become a teacher, school counselor, or social worker and have a powerful impact on our community.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
02041 02061	Introduction to Urban Education Multicultural Education	No	1.0	Elective	Yes

Introduction to Urban Education - 02041

Learn about the history of American schooling and educational philosophies historical survey of schooling and educational philosophies. Discuss current issues facing students, families, teachers, schools, districts and communities. In addition to class time, students will be required to actively participate in 30 hours of K-12 schools/community service learning.

Multicultural Education - 02061

Develop a curriculum philosophy that reflects your beliefs and values that includes instructional strategies, tools, and resources designed to foster increased student power, achievement, and equity in education for all students. Examine research-based instructional strategies to meet the varying needs of students from ethnically, ability, culturally, socioeconomically and linguistically diverse groups.

02051 02071	Technology for Educators Introduction to Special Education	02041	1.0	Elective	Yes
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Technology for Educators - 02051

As a future educator, develop technology skills to support student learning. Explore many different tools for planning, instruction, communication and record keeping. Engage in discussions on the "digital divide" as well as ethical and legal issues around technology and information sharing.

Introduction to Special Education - 02071

Explore special education: the history of the field, theoretical approaches, definitions, classifications, service delivery models, trends and issues. Examine the physical, social, cognitive, and behavioral challenges that affect children and youth with disabilities. Become familiar with the legal aspects and key legislation related to students with special needs.



Interested in a career in Education?

Click here to let your counselor know!



Learn more and register at cte.mpls.k12.mn.us

Law & Public Safety

RESPOND. INVESTIGATE. PROTECT. SERVE.



Explore all aspects of law, public safety, and first responder career pathways. From police officers and firefighters to city council members, and criminal investigators the law and public safety industry offers a wide range of career opportunities.

CTE | Edison Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
91101 91201	Intro to Law & Civil Service Police & Community Relations	No	1.0	Elective	Yes

Intro to Law & Civil Service – 91101

Get a behind the scenes look at the life of first responders in our community! In this course you will earn your Red Cross First Aid/CPR Certification and learn valuable life-saving skills and responsibilities needed when you arrive on the scene of an emergency.

Police & Community Relations – 91201

Discussions and activities will cover the principles behind community policing, how the justice system works, and a comprehensive review and understanding of how police, courts, and correctional departments are designed to work together to support individual stakeholders and communities.

CTE | Online

No transportation required – courses offered at your high school any period of the day.

91101AO	Intro to Law & Civil Service	No	.5	Elective	Yes
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Get a behind the scenes look at the life of first responders in our community! In this course you will earn your Red Cross First Aid/CPR Certification and learn valuable life-saving skills and responsibilities needed when you arrive on the scene of an emergency.

Discussions and activities will cover the principles behind community policing, how the justice system works, and a comprehensive review and understanding of how police, courts, and correctional departments are designed to work together to support individual stakeholders and communities.

91201AO	Police & Community Relations	91101	.5	Elective	Yes
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Serve and protect your community! In this course you will explore special concerns and historic interactions of law enforcement with racially and culturally diverse populations. Course discussions and activities will focus on contemporary law enforcement issues including crime prevention, police and community relations, ethical decision-making, cultural diversity, police professionalism, domestic abuse, bias-motivated crimes, and interpersonal communications.



Interested in a career in Law & Public Safety?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Healthcare

RESEARCH. DIAGNOSE. PREVENT. HEAL.



Ever wondered how the human body works? Gain hands-on experience and practical knowledge that will prepare you to enter a variety of healthcare and medical careers from emergency responder, nursing assistant, doctor, or pharmacy technician.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
98126 98616	Medical Terminology Healthcare Core	No	1.0	Elective	Yes

Medical Terminology – 98126

Become fluent in the language of health professionals! This course focuses on the recognition and understanding of medical terms and human anatomy. You will learn correct pronunciation and spelling of medical terminology, learn to interpret and use common medical abbreviations used in medical forms and records, as well as the ability to write, read and translate medical cases.

Healthcare Core – 98616

Interested in exploring healthcare careers? Through this entry-level course you will learn about the basic skills needed for working in any healthcare profession. Topics include: awareness and sensitivity to client/patient needs, behaviors for success in healthcare settings, required communications skills, ethics, legal issues, respecting client and staff diversity, and healthcare safety standards.

98636	Anatomy & Physiology	No	1.0	Elective	Yes
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Explore the human body on a cellular and systems level! This course provides a critical foundation for any health care career. Learn to identify structures within the body and the processes and functions related to these structures. Body systems covered include skeletal, respiratory, circulatory, lymphatic, nervous, integumentary, and gastrointestinal.

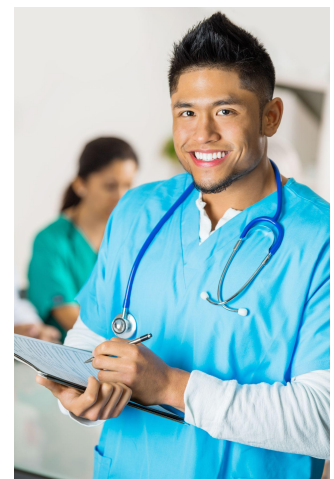
98126 98146	Medical Terminology Emergency Medical Responder	No	1.0	Elective	Yes
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Medical Terminology – 98126

Become fluent in the language of health professionals! This course focuses on the recognition and understanding of medical terms and human anatomy. You will learn correct pronunciation and spelling of medical terminology, learn to interpret and use common medical abbreviations used in medical forms and records, as well as the ability to write, read and translate medical cases.

Emergency Medical Responder – 98146

Learn how to save lives! Develop emergency medical skills and knowledge to assist people who have been injured or are suffering from a sudden illness or medical problem. This course is the first step to earn your American Red Cross Emergency Medical Responder certificate.



Interested in taking Healthcare classes?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Healthcare

RESEARCH. DIAGNOSE. PREVENT. HEAL.



CTE | Online

No transportation required – courses offered at your high school any period of the day.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
98126AO	Medical Terminology	No	.5	Elective	Yes

Become fluent in the language of health professionals! This course focuses on the recognition and understanding of medical terms and human anatomy. You will learn correct pronunciation and spelling of medical terminology, learn to interpret and use common medical abbreviations used in medical forms and records, as well as the ability to write, read and translate medical cases.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
98616AO	Healthcare Core	No	.5	Elective	Yes

Interested in exploring healthcare careers? Through this entry-level course you will learn about the basic skills needed for working in any healthcare profession. Topics include: awareness and sensitivity to client/patient needs, behaviors for success in healthcare settings, required communications skills, ethics, legal issues, respecting client and staff diversity, healthcare safety standards and procedures.



Computer Science

DESIGN. DEVELOP. TROUBLESHOOT.



Interested in learning about the latest trends in computer science and information technology? Explore the world of cybersecurity and computer programming – learn to use your coding skills to improve user experience, create apps, develop games, organize information, expose website vulnerabilities, and create security barriers.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
95616	Computer Science Principles	No	1.0	Elective	Yes

Expand your computer programming skills! In this course you will develop strong foundational skills used in game and app design, cybersecurity, and robotics. Skills include problem solving, logic programming, project management and the importance of computing ethics.

95626	Computer Science A	No	1.0	Elective	Yes
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Become an expert in JAVA and Android™ app development! Get familiar with computer science concepts and tools as you learn a subset of the Java programming language. Through small group and individual projects you will design, write, and test computer programs that solve problems or accomplish tasks.

95637 95638	Cybersecurity 1 Cybersecurity 2	No	1.0	Elective	Yes
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Cybersecurity 1 – 95637

Learn about the world of cybersecurity! In this course you will take the first step to becoming a Certified Cybersecurity Technician and learn fundamental principles associated with current-day cybersecurity issues and how to recognize and reduce and prevent attacks against enterprise networks and mission-critical infrastructure. You will also learn how to set up and configure interfaces, security zones, authentication, and policies on a Next-Generations firewall; and concepts involved in maintaining a secure network computing environment.

Cybersecurity 2 – 95638

Become a Palo Alto Networks Certified Cybersecurity Technician! In this course you will continue to build your knowledge of cybersecurity and learn how to collect high-fidelity intelligence, contextual data, and design automated prevention workflows that quickly identify and respond to fast-evolving threats. Students who successfully complete this course can become a Palo Alto Networks Certified Cybersecurity Technician.



**Interested in a career in Cybersecurity
or Computer Programming?**

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Computer Science

DESIGN. DEVELOP. TROUBLESHOOT.



CTE | Online

No transportation required – courses offered at your high school any period of the day.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
91009AO	IT Exploration	No	.5	Elective	Yes

Explore careers in computer science and information technology through simulations and independent projects. In this course you will develop skills related to digital media, computer hardware, operating systems, communication networks, software development, databases, and emerging technologies.

95607AO	Computer Science Essentials	No	1.0 year long	Elective	Yes
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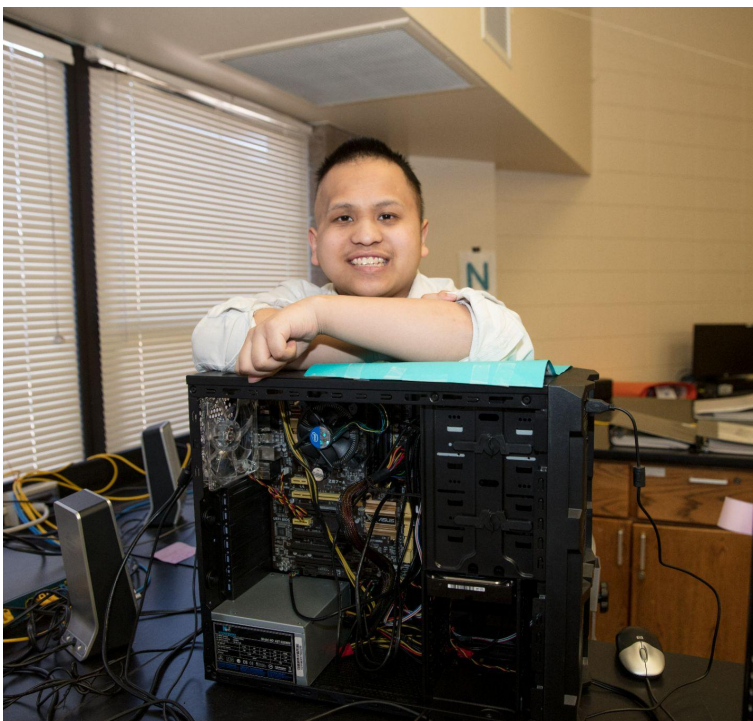
Explore how innovations in computing impact and connect our world. In this introductory programming course you will create mobile apps, program self-driving cars, and create text-based applications using ApplInventor, Vex Coding System, Python and Cloud9. This is a year-long asynchronous online elective course.

95637AO	Cybersecurity 1	No	.5	Elective	Yes
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Learn about the world of cybersecurity! In this course you will take the first step to becoming a Certified Cybersecurity Technician and learn fundamental principles associated with current-day cybersecurity issues and how to recognize and reduce and prevent attacks against enterprise networks and mission-critical infrastructure. You will also learn how to set up and configure interfaces, security zones, authentication, and policies on a Next-Generations firewall; and concepts involved in maintaining a secure network computing environment.

95638AO	Cybersecurity 2	95637	.5	Elective	Yes
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Become a Palo Alto Networks Certified Cybersecurity Technician! In this course you will continue to build your knowledge of cybersecurity and learn how to collect high-fidelity intelligence, contextual data, and design automated prevention workflows that quickly identify and respond to fast-evolving threats. Students who successfully complete this course can become a Palo Alto Networks Certified Cybersecurity Technician.



Learn more and register at cte.mpls.k12.mn.us

Media Arts

DESIGN. CREATE. COMMUNICATE.



Interested in using your creativity to design websites, create social media posts, or inform and entertain an audience? Check out these media arts courses and increase your skills to communicate and design in the digital world; create audio and video productions that may stream or get air time on KBEM-Jazz88, the school district's FM radio station.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
92509 92519	Creative Media 1 Creative Media 2	No	1.0	Art	Yes

Creative Media 1 – 92509

Expand your social media skills! Develop announcing skills at a real ON-AIR radio station. Take on the role of a DJ, podcaster, interviewer, and sports play by play announcer in real world settings – classroom, community, corporate setting, and independently on social media. Develop digital audio editing, commercial copywriting and electronic news gathering skills by covering news events for simulated live broadcasts.

Creative Media 2 – 92519

Become an influencer! Students Learn advanced skills as you produce your own podcasts, DJ, and create a unique on-air radio personality. Learn through hands-on experiences (simulated and live) applied to the Twin Cities radio and podcast industry. Work independently, in small groups and as part of a production team with your teacher, radio station employees as you solve the daily challenges involved in running your own broadcast and a radio station.

92606 92616	Digital Photography 1 Advanced Photo & Editing	No	1.0	Art	Yes
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Digital Photography – 92606

Like to take pictures and focus in on the details of life? Explore how to take great pictures that tell a story. Explore camera features, principles of studio and natural lighting, image composition, on-location and studio shooting, in-camera image manipulation, and how to catalog and manage your images aligned to industry standards.

Advanced Photography & Editing – 92616

Expand your digital photography skills to include image editing and creative composition. Learn how to manipulate and prepare images for commercial print and digital use; including an introduction to video production, story concept, visual styles, lighting design, and 3D animation.

92709 92719	Digital Video 1 Digital Video 2	No	1.0	Art	Yes
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Digital Video 1 – 92709

Interested in expressing yourself through film and video? Learn all phases of video production, including pre- and post-production, while you create digital video; feature length films, shorts, YouTube, animation and stop-motion videos. Plan, record, and edit videos using digital cameras and professional software.

Digital Video 2 – 92719

Expand your video production skills and develop advanced technical knowledge of camera operation, audio recording, lighting systems, visual effects, graphics, and copyright laws. Experience firsthand how to write copy, storyboard, create characters, add visual effects.

Interested in expressing yourself through digital design?

Click here to let your counselor know!



Learn more and register at cte.mpls.k12.mn.us

Media Arts

DESIGN. CREATE. COMMUNICATE.



CTE | Online

No transportation required – courses offered at your high school any period of the day.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
92406AO	Adobe Photoshop	No	.5	Art	Yes

Interested in commercial photography or graphic design? Build a portfolio of digital designs aligned with industry standards and express your creativity while you learn the common features and uses of Adobe Photoshop. Create original artwork, manipulate color images, retouch photographs and explore how you can apply these skills in a variety of media arts career opportunities.

92416AO	Adobe Illustrator	No	.5	Art	Yes
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Explore the world of graphic design and learn the principal vector drawing software used in logos, branding, and multimedia. Use Adobe Illustrator to create your own artwork, learn color theory, drawing and composition, typography and quality file management skills.

92509AO	Creative Media 1	No	.5	Art	Yes
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Expand your social media skills! Develop announcing skills at a real ON-AIR radio station. Take on the role of a DJ, podcaster, interviewer, and sports play by play announcer in real world settings – classroom, community, corporate setting, and independently on social media. Develop digital audio editing, commercial copywriting and electronic news gathering skills by covering news events for simulated live broadcasts.

92519AO	Creative Media 2	92509	.5	Art	Yes
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Become an influencer! Students Learn advanced skills as you produce your own podcasts, DJ, and create a unique on-air radio personality. Learn through hands-on experiences (simulated and live) applied to the Twin Cities radio and podcast industry. Work independently, in small groups and as part of a production team with your teacher, radio station employees as you solve the daily challenges involved in running your own broadcast and a radio station.

92916AO	Yearbook Publishing	No	.5	Art	No
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Explore the world of contemporary graphic design and desktop publishing. Support the creation of your high school's yearbook as you develop skills related to print layout, electronic imaging, typography, conventional and digital photography, production management, and journalism.



Engineering

DESIGN. BUILD. INNOVATE.



Interested in how things are designed and manufactured? Your future in engineering and technology begins here! Get an “insider’s view” of how engineers apply mathematical skills and scientific knowledge to solve real-world problems. Take a course or two at the Tech Center and explore the fields of mechanical, electrical, industrial or civil engineering.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
95406	Introduction to Engineering Design	No	1.0	Art	Yes

Do you like solving problems? In this course explore modern prototyping tools including 3D printers and scanners, laser engravers, and a variety of other lab tools to through individual and small group projects. Special attention is placed on 3D computer modeling to design, produce, and evaluate innovative products.

95416	Principles of Engineering	No	1.0	Art & Physics	Yes
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Discover mechanical engineering! Through hands-on projects advance your skills and understanding of engineering and engineering technology, with particular focus on systems and manufacturing processes that keep pace with today’s ever-changing technology. Students will take on the role of engineers and technicians as they apply their math, science, and technology skills to solve problems. Discussions cover the potential social and political benefits and consequences of technological change.

95426	Digital Electronics	No	1.0	Elective	Yes
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Smart circuits are present in virtually all aspects of our lives (i.e., computers, medical devices, and digital electronics)! Study and develop circuit design skills; application of electronic logic circuits and devices and use of Boolean logic while you advance your understanding of basic circuits and electricity concepts through teamwork, communication methods, engineering standards and technical documentation.

95506	Civil Engineering & Architecture	No	1.0	Art	Yes
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Ever wondered about what it took to design and build the city you live in? In this course you will take on the role of architect and civil engineer as you learn about residential and commercial buildings, site design and development, and standard engineering practices; develop skills in engineering calculations, technical representation, design documentation, and 3D architectural design.

95516	Computer Integrated Manufacturing	No	1.0	Art	Yes
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Learn how engineering designs and manufacturing processes link together to produce products or solve manufacturing design problems. Learn about computer modeling, Computer Numeric Control (CNC) equipment, Computer Aided Manufacturing (CAM) software, robotics, and flexible manufacturing systems.

95906	Engineering Design & Development	varies	1.0	Art	Yes
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Apply your engineering know-how and entrepreneurial skills in this capstone course. Design a patentable engineering product - initial concept through prototype and present your prototype to industry and manufacturing professionals.

Interested in Engineering classes?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Robotics & Drone Technology

DESIGN. BUILD. CODE. FLY.



Solve industrial design challenges using robotics & drone technology! Learn the basics of mechanical design, programming logic, coding and what it takes to become a certified commercial drone operator.

CTE | North Tech Center

Includes free transportation to and from the Tech Center.

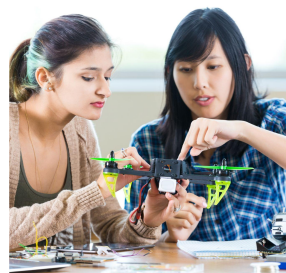
Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
91639 91640	Robotics Drone Technology	No	1.0	Elective	Yes

Robotics – 91639

Explore how robots solve real world problems. Learn about basic electronic control, mechanics, and elements of advanced programming logic. Develop problem solving, teamwork, and project management skills.

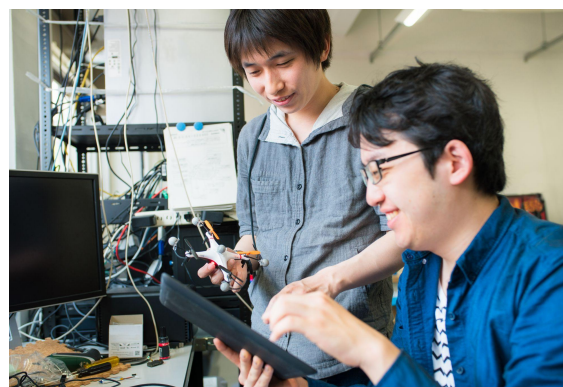
Drone Technology – 91640

Become a certified commercial drone operator! Immerse yourself in key Federal Aviation Administration (FAA) knowledge areas – aviation weather, crew resource management, airport operations. Student will also learn coding, photo/videography techniques, and customer relations in the context of commercial drone operations.



Expand your knowledge of how robotics and drones can be used in a variety of professional settings and careers.

Check out the CTE engineering classes on page 16, and media arts classes on pages 14 and 15.



Interested in taking a Robotics class?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Automotive

DIAGNOSE. TROUBLESHOOT. REPAIR.



Interested in gaining knowledge and hands-on auto shop experience? Learn how to service and repair multiple types of automobiles and powersports equipment and determine if a career in this industry is a good fit for you.

CTE | Roosevelt Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
97101 97111	Basic Auto Advanced Auto	No	1.0	Elective	Yes

Basic Auto – 97101

Learn basic car maintenance skills. Through hands-on activities and labs, master correct procedures for servicing vehicles, shop safety, how to use service manuals and automotive tools, operation of shop equipment, and routine service repairs such as tire inspection, fluid conditions, fluid levels, changing and repairing tires, and maintaining automotive maintenance logs.

Advanced Auto – 97111

Advanced car maintenance. This course builds on knowledge gained in Basic Auto I. Hands-on activities and labs will focus on advanced understanding of engine performance, brakes, auto electrical systems, steering, suspension, and alignment. Students complete the course by identifying and performing basic services on a vehicle.

96701 96702	Small Engines Powersports & Equipment	No	1.0	Elective	Yes
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Small Engines – 96701

Discover how engines work. Learn about mechanical components, performance and repair of 2- and 4-stroke engines through hands-on activities and classroom assignments. Learn about principles of engine operation and construction, carburetion, and the disassembly and reassembly of small gasoline engines.

Powersports & Equipment – 96702

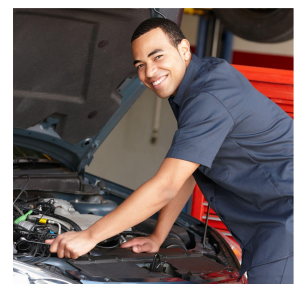
Apply your knowledge of small engines to the powersports industry. Learn to troubleshoot and repair minibikes to utility terrain vehicles (UTV)s and everything in between. This course will focus on engine, drivetrain, electrical, brake, and hydraulic systems along with general maintenance.

97404	ASE Collision Repair 1	No	1.0	Art	Yes
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Take the first step to become ASE certified in Automotive Collision and Repair. In this course you will develop a variety of auto body repair skills including: panel repair and replacement, removal, replacement, and adjustment of interior and exterior panels, metal finishing and body fill, metal welding and cutting, plastic and adhesive-related repair procedures.

97414	ASE Collision Repair 2	97404	1.0	Art	Yes
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Advanced collision car repair. This course builds on knowledge gained in ASE Collision Repair 1. Hands-on activities and labs will focus on advanced understanding of surface preparation, use of paint spray gun and related equipment, how to assess paint defects, how to mix, match and apply paint. Personal and environmental safety practices will be emphasized.



Interested in an unpaid automotive, apprenticeship-like experience? The auto program takes on a few unpaid interns each year to work on independent projects, train students, and learn how to manage a variety of tasks associated with working in an auto shop. Talk to your teacher if you are interested in this opportunity.

Interested in the maintenance of cars?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Construction & Welding

DESIGN. BUILD. CREATE.



Express your technical and artistic talents in our trades and manufacturing labs! Learn if a career in construction or welding is right for you – develop skills you will use for a lifetime.

CTE | Roosevelt Tech Center

Includes free transportation to and from the Tech Center.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
96212 96222	Construction Trades 1 Construction Trades 2	No	1.0	Elective	Yes

Construction Trades 1 – 96212

Interested in a career in construction or learning valuable home maintenance skills? In this course you will develop basic carpentry, metals, electricity, and pipefitting skills along with safe usage of hand and power tools applicable to each skill set.

Construction Trades 2 – 96222

Continue the development of your construction and skills through individual and group projects in carpentry, electrical wiring, plumbing, wall framing, door and window installation, cement masonry and more.

96526 96536	Welding 1 Welding 2	No	1.0	Art	Yes
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Welding 1 – 96526

Interested in becoming a welder? Learn how to use the art of welding in artistic and industrial settings. Develop basic skills related to safety, equipment set up, metal transfer, gas shielding and welding various types of metals. This class focuses on oxyacetylene and gas tungsten arc welding.

Welding 2 – 96536

This course builds on the skills developed in Welding 1 and focuses on careers and skills needed in the construction industry. Develop skills in shielded metal arc welding and gas metal arc welding through simulators and hands-on projects, plus tour construction job sites and trade union apprenticeship training facilities.



Completed levels 1 and 2 and want to continue building your technical skills in an unpaid apprenticeship-like experience? The construction and welding programs take on a few unpaid interns each year to work on independent projects, train students, and learn how to manage a variety of tasks associated with running a construction or welding lab. Talk to your teacher if you are interested in this opportunity.



Interested in Industrial Construction and Welding?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



Machine Technology

PLAN. MEASURE. CREATE



Interested in learning about careers in manufacturing and operating machine tools? Today's manufacturing is about advanced technologies, state of the art facilities, and fast-paced work environments. Learn skills for in-demand manufacturing careers: CNC machine tool programmers, computer-controlled machine tool operators, and mechatronic technicians.

CTE | South High School

No transportation provided in 2024-2025 school year.

Registration Code	Course Name	Prerequisite	Credits	Meets Grad Requirement	College Credit
96301	Machine Technology 1	No	.5	Art	Yes

Increase your knowledge and skills in the use of common hand tools, engine lathes, shapers, drill pressed, milling machines, and grinders. In this class students will have hands-on experiences in elementary mechanical fundamentals and principles used in precision manufacturing industries.

96302	Machine Technology 2	96301	.5	Elective	Yes
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This course builds upon skills developed in the Machine Technology 1 course with increased emphasis on precise workmanship. Students are expected to participate more actively in the planning stages of the work and to take a more significant role in shop organization and management.

96303	Machine Technology 3	96302	.5	Elective	Yes
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This advanced course is valuable preparation for students interested in machine tool, manufacturing, mechatronics or engineering careers. Project work is based on interests, skills, and ability. Expand machine shop experiences in various combinations of fundamental mechanisms, methods, and processes as they apply to machine shop tools.

Completed level 1 and 2 and want to continue building your technical skills in an unpaid apprenticeship-like experience?

The machine technology program takes on a few unpaid interns each year to work on independent projects, train students, and learn how to manage a variety of tasks associated with running a construction or welding lab. Talk to your teacher if you are interested in this opportunity.



Interested in a future career in trades and manufacturing?

Click here to let your counselor know!

Learn more and register at cte.mpls.k12.mn.us



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