

# Duluth Public Schools Career Technical Education Fact Sheet



## Career Technical Education (CTE) Overview

Business, Management & Administration | Agriculture, Food & Natural Resources | Arts, Communications & Information Systems  
Engineering, Manufacturing & Technology | Health Science Technology | Human Services

Throughout the state at the secondary level, career technical education is delivered through a comprehensive high schools, cooperatives, and centers. Duluth offers students opportunities in all six State Career Pathways. This past year, ISD #709 offered eight distinct career programs and 46 distinct courses. We completed our 5-year Program Approvals with MDE for CTE levy and Perkins Eligibility. At the postsecondary level, Minnesota uses technical and community colleges to deliver career technical education. ISD #709 offered two CITS programs; and to date 90% of our programs are either granted articulated college credit or pending college credit for our students.

## Snapshots of Career Technical Education

### EMR Program

- New LSC collaborative program
- Articulated Credits
- New options for students interested in pre-hospital careers



### Educational Careers

- Brought back this year
- Child Development
- FCCLA Club
- Pathways 2teaching possibly tied to program.



### Construction

- Working with LSC
- Apprenticeship Hours
- Potential growth



### New Outdoor Classroom

- Part of Agriculture and Forestry Program
- Assisted by MN CC, MN DNR, and Local partners
- Available for all any school course and community event.



### Automotive

- Completed National recertification
- New Instructor
- Donations and industry connections



### Engineering Design

- Fablab Complete
- 4 Career Streams
- All Girls Welding Afterschool
- First TSA
- SkillsUSA Club
- State Leadership



## Highlights

- ✓ National participants in HOSA and SkillsUSA
- ✓ Public awareness
- ✓ Representation on AMFA Board, Workforce Board, State CTE working groups
- ✓ Increased industry connections
- ✓ Increased Work Based Learning opportunities for students.

## Enrollment Data

2016-17 Academic Year:

- 779 students enrolled in CTE programs.
- 1270 total enrolled
- 252 Receiving Support Services
- 367 Special Populations
- 165 Protected Populations
- 39 Students received Industry Certifications



## Secondary Student Performance

- 47.79% MCA Reading
- 29.22% MCA Math
- 88.89% Graduation
  - \*\*District 76.1% (2016)
- 96.67% Completions
- 26.44% Nontraditional

## Federal Perkins Funding

Used to update .2 Work Based Learning (WBL) Coordinator for adding Div Occs program; MCIS; professional development; field trips and industry exposure—Construct Tomorrow, Tour of Manufacturing, Career Days, etc.

## CTE Levy

Each year the district has the option of levying 35% total cost of salary, travel, supplies associated with CTE programs.

## For more information

### Brad Vieths

Vocational Programs Coordinator:

Phone: 336-8711 ext. 1031

Twitter: @CTEduLuth

Email: [Bradley.vieths@isd709.org](mailto:Bradley.vieths@isd709.org)

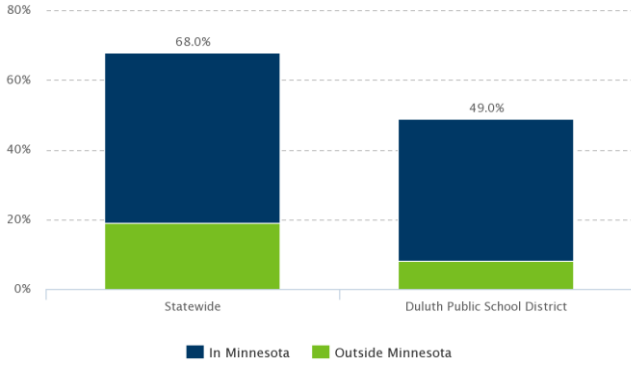
## Special Industry Support

- ❖ **Northstar Ford:** 2005 Explorer, Tooling and multimeters
- ❖ **APEX: UPI, Jamar, BOLDT, Northland Constructors:** Donation of Cold Weather Gear
- ❖ **Northshore Estates:** Provides Clinical Location for CNA
- ❖ **Altec:** Materials, paid female welding mentor, tours, club support
- ❖ **LSC:** Free Professional Development and collaboration with our instructors.



**Industries and groups that have donated or supported our programs this past year:** Levy Tree Care, MN DNR, MNCCC Maurices, UWS, Edward Jones, Sappi, Mesina Realty, MDA, Lake Avenue Café, Essentia Health, Endion Square Preschool, Little Learners, LSC, DEED, Duluth Workforce Center, YES! Duluth, Dept of Workforce Development, Northern Acrylic, Glenwood Signs, Epicurean, First Technologies, PDM, FeraDyne, Pro Print, Mesabi Range CTC, On the Limit, Fourth Street Auto, ASEYEF, Ogston's Body and Paint, O-Reilly Autoparts, App Constructors, Heartland Constructions, Cirrus Aircraft, AAR, Monaco Air, Northern Aero Alliance, UMD, WITC

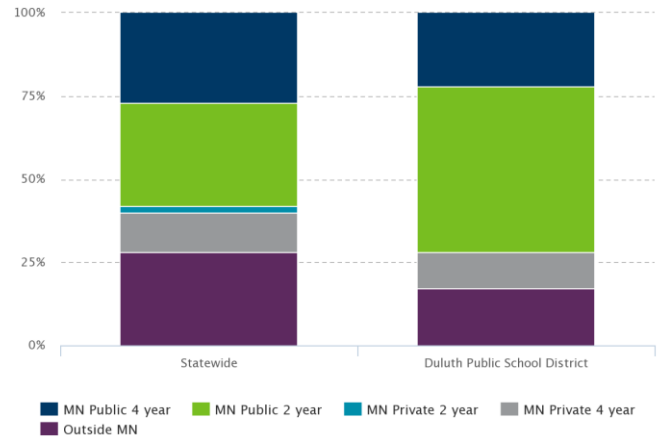
## Percent of CTE HS Graduates Enrolling in College - Fall



Location	Statewide	Duluth Public School District
In Minnesota	49% (23,796)	41% (151)
Outside Minnesota	19% (9,300)	8% (30)

Based on 2016 SLEDS data

## Students Enrolling in College the Fall after HS Graduation



Type	Statewide	Duluth Public School District
MN Public 4 year	9,125 (28%)	40 (22%)
MN Public 2 year	10,254 (31%)	91 (50%)
MN Private 2 year	575 (2%)	CTSTR (%)
MN Private 4 year	3,842 (12%)	20 (11%)
Outside MN	9,300 (28%)	30 (17%)

Based on 2016 SLEDS data

## 5S1 CTE Placement 4 Year Institutions

Grand Total	33	161	20.50%
Male	6	82	7.32%
Female	27	79	34.18%
American Indian/Alaskan Native	0	5	0.00%
Asian	1	2	50.00%
Hispanic	0	2	0.00%
Black, Non-Hispanic	1	6	16.67%
White, Non-Hispanic	31	139	22.30%
Hawaiian/Pacific Islander	0	0	0.00%
Multi	0	7	0.00%
Total Race/Ethnicity	33	161	20.50%
Individuals with Disabilities	0	32	0.00%
Economically Disadvantaged	5	67	7.46%
Displaced Homemakers	0	0	0.00%
Single Parents	0	0	0.00%
Nontraditional Enrollees	7	30	23.33%
Limited English Proficiency	0	0	0.00%
Migrant	0	0	0.00%
Other Educational Barriers	0	0	0.00%

Report Year: 2016-17

## 5S1 CTE Placement 2 Year Institutions

Grand Total	52	161	32.30%
Male	22	82	26.83%
Female	30	79	37.97%
American Indian/Alaskan Native	2	5	40.00%
Asian	1	2	50.00%
Hispanic	2	2	100.00%
Black, Non-Hispanic	2	6	33.33%
White, Non-Hispanic	43	139	30.94%
Hawaiian/Pacific Islander	0	0	0.00%
Multi	2	7	28.57%
Total Race/Ethnicity	52	161	32.30%
Individuals with Disabilities	4	32	12.50%
Economically Disadvantaged	19	67	28.36%
Displaced Homemakers	0	0	0.00%
Single Parents	0	0	0.00%
Nontraditional Enrollees	10	30	33.33%
Limited English Proficiency	0	0	0.00%
Migrant	0	0	0.00%
Other Educational Barriers	0	0	0.00%

Report Year: 2016-17



February 1, 2018

Dear Duluth Public School Board,

The following packet of information is a broad overview of the status of Duluth Public Schools District's Career and Technical Education Programs (CTE). I am including in this packet different reviews and reports of the program as a whole and also the individual program needs. This annual presentation is directly tied to the month of February because of National CTE Month. I know that supporting CTE programs is difficult when dealing with financial and community hardships, but these programs truly provide a connection and style of learning that supports and connects to a vast group of students that core-academics struggle with at times.

In celebration of National CTE Month, I invite you to visit any and or all of our programs throughout the district this month and to visit the District's CTE webpage which can be found at any of the parent or student links or at: <https://sites.google.com/a/isd709.org/duluth-career-and-technical-education/>. I also invite you to follow our daily updates during February on Twitter under the handle @CTEduluth.

Included in this packet are detailed information about each course that is offered through the Duluth CTE program and the first page gives you an overview of our strengths, hurdles, and successes. I have chosen to focus on how our programs are doing at getting students to enroll in college as well as how our programs are serving our most at-risk and needy populations. However, if you feel you want additional information or to schedule a visit, please contact me. At the Education Committee meeting, I will be using that document as my guide and referencing different aspects of the other attached documents.

Thanks for your time and service and I cannot wait to share with you our programs on February 13<sup>th</sup>.

Sincerely Yours,

A handwritten signature in black ink, appearing to read "Brad Vieths". The signature is written in a cursive style with a large initial "B" and "V".

Brad Vieths  
Vocational Programs Coordinator

---

## Career & Technical Education Update

Bradley Vieths  
Vocational Program Coordinator  
ISD #709 Duluth Public Schools  
Duluth, MN 55802  
Phone: (218)336-8711 ext 1031  
Email: [bradley.vieths@isd709.org](mailto:bradley.vieths@isd709.org)

# Program Overview Discussion

February 13th, 2018

Present: Duluth Public School Board

## OVERVIEW

The purpose of this meeting was to share status and immediate issues of career and technical education (CTE) in ISD #709. Information was gathered for this meeting focusing on current status of department and content areas; financial status and needs; immediate needs and available options; and working towards a long-range plan of action for the district.

## GOALS

1. Develop a plan for immediate needs and issues in the CTE department
2. Create a pathway and initiative for funding CTE: goals vs. aspirations
3. Modify the program to be more self-sustaining financially and with staffing.
4. Create Priority list based on District views and goals for this program

## Courses, Enrollments & Structure *See Attachment #1 for exact Numbers.*

Enrollments in CTE have been steady, and all programs except one Culinary at East, were at maximum enrollment at sectioning last April. This year we piloted two new courses for students and brought back one additional program:

- First Aid/EMR in Health Occupations (1 section at each site)
- Introduction to Manufacturing: Denfeld Campus
- Child Psychology (2 sections at each site)

Thanks to support from the Superintendent we were able for the first time to offer every program that had enrollment. The additional FTE provided 12 new sections of courses offerings. The program has also been able to modernize with curriculum adoption. Programs have also completed evaluations based on “best practices,” and the Vocational Programs Coordinator has been working with programs on areas to improve on based on concerns in evaluations.

### **Keys to Remember:**

- **Programs need to meet industry standards and local need.**
- **Class size is still sticking point with FTE allocations**
- **Need to better align with Middle School**

## Finance 2018

Currently, the financial structure with regards to staffing and supplies has been reorganized and simplified. Programs have sufficient budgets to be fiscally sound and not indulgent. Most programs have updated equipment and small tooling updated. That being said, we still need to look at what the “break even” or threshold of the district. We can’t support or offer everything so need to make decisions on programs that support. Community connections have greatly increased. Over the past 18 months programs have received:

- Culinary: Free produce and supplies
- Automotive: Tooling, dealership interns/training, one factory direct vehicle from Subaru, First Dealer vehicle donation; 4-6 vehicles new to the fleet from community donations, the district will be sponsoring an auction this spring.
- Construction: Materials and cost tied to Lake Superior College (LSC); Donations of cold weather gear for students.
- Engineering: Steel, acrylics, foam, other building supplies from industry. Virtual and potential self-contained welding on loan from LSC for the East campus
- Free field trips to industry paid for by the potential employer: MN Power, Verso
- Agriculture: Outdoor classroom at East.
- Health Occupations: All EMR equipment on loan/donated from LSC, two Virtual Geriatric Simulators, eight mannequin updates (Perkins)

### **Keys to Remember:**

- **There will always be needs for updating, and larger equipment is getting outdated.**
- **We are only as good as our latest industry connection**
- **We have to provide something and not always take.**

## Facilities

Currently, facilities (labs and classrooms) as a whole are adequate.

- There are minor concerns in the following:
  - Construction:
    - Equipment needs: Trailer and financial plan if going to expand: House, garages, sheds
    - Capacity needs: Program will require small enrollment and may need to look at scheduling options if going to expand.
  - Medical Occupations:
    - Rooms are setup but need additional upgrades due to rising enrollment. Under best practices it is recommended not to have more than three students per patient simulated bed, we are currently above this capacity.
- Long-term needs:
  - Engineering & Design:
    - East High School
      - Additional metal skills; need to provide structural venting in classrooms
      - Welding units; need to add Mill and Lathe

- Denfeld High School
  - Add Mill and Lathe
- District-wide
  - Grades 6-12; More 3D printers and Laser cutters due to usage
  - Software: Need long-term budget commitment for purchases. Due to budget reallocations this past year, the planned budget for software purchase are no longer available.
- Health Occupations:
  - High Schools
    - Beds and lab setting is outdated. Need to update to match current industry standards and settings.
- Automotive:
  - Two new hoists are needed for the program which potentially will be donated by industry. The cost of labor would need to be realized by the district.
- All programs:
  - The optimum for CTE programs are smaller class sizes due to hands-on learning, as the district operates at larger class-size ratio, offering or expanding CTE courses become difficult to justify.

**Keys to Remember:**

- **There will always be needs for updating, and larger equipment is getting outdated and expensive to replace.**
- **Need to plan long-term for larger facility needs.**

## **Connections and Branding 2018**

This has been a huge success. With all the connections made, we now have local and regional support. The regional advocacy is showing signs of growth, and through attending general outreach we continuously advocate for programs in CTE. We have also updated on all state websites our scope and sequence; the next step is to promote resources for guidance, and community.

[www.mnprogramsofstudy.org](http://www.mnprogramsofstudy.org)

[www.ctecreditmn.com](http://www.ctecreditmn.com)

To date, every CTE program in the district is currently articulated with college credit or at a minimum pending college credit. We are also in the works of offering CITS credit for Graphic Arts with Bemidji State University which are keys for today's students.

**Keys to Remember:**

- **The budget for marketing materials: Banners for schools, signage, brochures, etc.**
- **Separate area in the course catalog. We reference it everywhere, but nothing makes CTE stand out in it.**
- **REGIONAL PATHWAYS\*\***

\*\*The number one goal of the CTE program is to continue promoting, connecting and branding our programs. Through the district PR program, we updated, modified, and created a comprehensive public and social media presence. The continuous goal in the CTE program is to align the curriculum to focus on universal job skills, dual credit, work experience, and using industry and post-secondary logos, and presence in our classrooms.

## **SHORT TERM MILESTONES**

### **Career and Technical Department (17-18)**

Overall the support you have provided has helped the CTE programs in the district. Our programs have experienced a resurgence, and our new programs continue to see enrollment increases. Restructuring the current accounting systems and communication allows us to provide more accurate data

The largest change will be the tentative creation of a District Career and Technical Education Advisory Committee. The goal would be to invite 40-60 people to annually meet and discuss the status of our CTE and seek guidance with regards to Programs, Staffing, Connecting, Performance Indicators, etc.

### **Program by Program Review:**

#### **Construction**

A goal in the construction area is to generate revenue and another to increase student enrollment. At this time, our collaborative work with Lake Superior College (LSC) on the house building project has resulted in greater student engagement. The potential for additional sections are possible, but always difficult to class size.

#### **Business and Finance Courses**

First and foremost, we have changed all of these content courses to semesters and not yearlong. By offering classes in a non-sequential cycle, students are finding it easier to access to a wide variety of marketing: Introduction to Business, Sports Marketing, Leadership and Coaching, Entrepreneurship. Sections of Personal Finance at the ALC and AEO have been added.

#### **Agriculture & Forestry**

This program has been the second largest success in the CTE program. It has gone from an enrollment of 15 a year to over 45 a year. That being said, we still should look into what is equitable and functional if students are not choosing to travel for this program. It has re-established an active advisory board but still looking at how to better align with our region. Our current offering of Plant Science and other classic Agriculture programs don't fit regional employment data but could look at small-scale farming, outdoor management, etc. The other agriculture offering, Forestry and Wildlife Management have designed an outdoor classroom, reorganized the trail systems in the school forest and continues to grow.



## **Automotive**

This is our District's first Rigorous Program of Study at the state level, and the five-year ASEEF recertification. The new instructor is coming from industry, and with that, a learning curve has been in progress. The automotive program has been our best supported and maintained the program. Enrollments have dropped in recent years due to other CTE options. Along with the hoist, additional funding of \$3500 to pay for a curriculum that is currently covered by Perkins will be needed.

## **Engineering Design**

The new Fablab at Denfeld continues to promote the courses in the Engineering field. All programs are now offered equally at both sites in fields of; Architecture, Engineering, Manufacturing. Issues with this program will be long-term costs to support it. Long-term sustaining of equipment and supplies will make this always the most expensive program.

## **Graphic Arts**

As we continue to meet the demands of the industry with training of our students, we continue to see growth in this program. Through the recent curriculum adoption, we have added new industry printers, silk screening, and drying capabilities. Through collaborative efforts with programs we better utilize and share some of the Engineering equipment.

## **Culinary**

At Denfeld, we have shifted an outdated course into the new entry point called "Intro to Cooking". Enrollment is stable, but more importantly, it is gaining a more diverse student group and expanding the offerings of the program. Last year had over 30 students working in hospitality over the summer; holds two mock interview sessions a year with industry volunteers; is catering more and students enjoying the work aspects.

At East, the restaurant experienced one of the most popular, and productive years. It continues to be a favorite in the community. Again, due to the hands-on teaching, it is difficult for the district to provide small class size.

## **Health Occupations**

The program is our second Rigorous Program of Study. Currently, we eliminated one section this year, so this caused a decrease in enrollment. The 17-18 school year allows the program to pilot a Basic Life Support and Emergency Medical Responder Course. The first semester was completed at Denfeld, with 100% of the students receiving certification for First Aid and Basic Life Support.

## Aerospace Physics

In its second year, the program is stable. East experienced a double growth and now has two sections. Denfeld is stable at the same one section. Key now will be long-term support, continued tie-in with our local industry partners. As it has grown, it is clear that this program ties directly to the Engineering Program.

## Child Development/Psychology

This was brought back this year and overall is doing quite well according to student feedback and enrollment. One section per semester is offered at each high school, and the instructor has developed a leadership program.

## Work Based Learning (WBL)/Internships

Currently, programs include: Disadvantaged WBL, Special Education (SPED) WBL, and a Diversified Occupations WBL. By reviewing the standards, we have established an innovative model where students can access the programs in a variety of ways. The district has also started a working group to now better organize the SPED WBL program, and we hope to have a working model to present to Special Services on how the SPED department can better create transition planning and work experience for students that fit the need but still meets MDE and CTE guidelines.

## LONG TERM MILESTONES

### Career and Technical Department (TBD)

1. Change Guidance/Registration manual to a Career Pathway model for all students
  - a. It's not about credits – it is about students having a plan towards life
2. Each Site has a program when physically possible
3. Every Course is tied to a Technical Skills Assessment(TSA)
  - a. Potentially cost covered by district and/or program for students who are concentrators
4. Every Course as a “competitive/real-world” experience to it
  - a. SkillsUSA/DECA/FBLA/Prostart/HOSA/FCCLA
5. When possible, courses generate as much revenue that goes into a CTE fund to help cover additional costs of programs. High revenue gets their needs and trickles down, or Perkins grant monies then go into them
6. Create and fund a Bridges or Pipeline Model based on Local Grants and In-Kind donations
  - a. Leads to a network: Professionals; Apprentice/Intern; Exposure; Opens Doors
7. Alternative Credit for Essential Standards in other areas: Math, Science, Art, WBL, Social, ELA

### Courses/Programs to Add (TBD)

**Career Pathways Work:** This year Perkins has allocated \$8500 to be spent by July 1st to get the following schools: Proctor, Hermantown, Duluth, Esko involved in a discussion on creating Career Pathways Work.

## RESOURCES

Blowe, E. H., & Price, T. (2012). Career and Technical Education. *SAGE Open*, 2(3), 2158244012455437.

Castellano, M., Stringfield, S., & Stone, J. R. (2003). Secondary career and technical education and comprehensive school reform: Implications for research and practice. *Review of Educational Research*, 73(2), 231-272.

Conley, D. T. (2010, February 12). *College and career ready: Helping all students succeed beyond high school*. John Wiley & Sons.

Doolittle, P. E., & Camp, W. G. (1999). Constructivism: The career and technical education perspective.

Rosenbaum, J. E. (2001, November 29). *Beyond college for all: Career paths for the forgotten half*. Russell Sage Foundation.

<http://www.careertech.org/>

<http://www.nocti.org/index.cfm>

<http://cte.ed.gov/>

<http://www.cte.mnscu.edu/programs/index.html>

<http://www.mnprogramsofstudy.org/mnpos/>

Duluth CTE Enrollment 2017-18 Academic Year										
		East		Denfeld		AEO		ALC		
Course Number	Course Name	Fall 2017 enrollment	Spring 2018 enrollment	Fall 2018 Enrollment	Spring 2018 enrollment	Fall 2017 enrollment	Spring 2018 enrollment	Fall 2017 enrollment	Spring 2018 enrollment	Total Seat Count
102201-102202	Graphic Arts/Digital Design 1	74	61	38	27					200
102301-102302	Graphic Arts/Digital Design 2	14	9	3	3					29
102401-102402	Graphic Arts/Digital Design 3	6	5	3	3					17
110000	Business and Personal Finance	36	30	0	0	0	0	5	8	79
110010	Business and Personal Finance					7	11			18
111901-111902	Accounting 1	0	0	0	0					0
114100	Introduction to Marketing and Business	20	31	23	0					74
114200	Sports and Entertainment Marketing	0	0	0	16					16
114300	Business Management, Leadership, Coaching	0	0	0	0					0
114400	Starting Your Own Business-Entrepreneurship	24	0	0	24					48
121100	CAD for Engineering	19	19	0	0					38
121500	Principles of Engineering	5	4	0	0					9
122100	CAD for Architecture	19	0	0	0					19
122200	Civil Engineering and Architecture	0	0	0	0					0
121200	Introduction to Engineering and Design	24	15	10	18					67
121300	Engineering Research and Design	2	2	0	13					17
124100	Manufacturing Technologies	16	12	9	0					37
124200	Advanced Manufacturing Technologies	2	11	0	0					13
125000	Advanced Independent			0	0					0



	Engineering Research and Design								
171621-171622	Construction Tech 1	7	7	7	8				29
171721-171722	Construction Tech 2	0	1	1	1				3
171821-171822	Construction Tech 3	0	0	0	0				0
171921-171922	Automotive Basics: Brakes and Engines	17	15	17	16				65
172021-172022	Automotive: Diagnostics & Electrical	2	1	2	2				7
172121-172122	Automotive Basics: Transmission and Suspension	6	3	8	12				29
172221-172222	Automotive: Engines & Performance	4	3	2	2				11
172600	Industrial Robotics and Automation	0	0	0	0				0
151100	First Aid, CPR and Emergency Response	0	15	10	0				25
151221	(CITS)* Medical Occupations	19	0	20	0				39
151322	(CITS)* Intro to Nursing/Home Health	0	17	18					35
160000	Introduction to Cooking	15	15	20	27				77
160020	Deli Management	0	0	22	28				50
161120	Advanced Deli Management Class	0	0	10	9				19
161220	Introduction to Foods	8	12	0	0				20
161320	Classical Line Cooking	8	6	0	0				14
161420	Classical Cooking	7	10	0	0				17
161520	Restaurant Management	0	0	0	0				0
161620	Waiter/Waitress	9	8	0	0				17
201400	Child Development/Child Psychology	17	19	17	35				88
201521-201522	Early Childhood and Education Professions	0	0	0	0				0
201581-	Infant and Toddler	0	0	0	0				0

