

A Guide to Completing the CTE Program Labor Market Demand Rubric

Introduction

By definition, career and technical education (CTE) programs should help prepare students for college and careers by identifying career pathways, which lead to employment. This guide is intended to support schools through the decision making process to determine the viability of program proposals as well as the sustainability of existing programs.

Once you know which type of CTE program you want to evaluate or propose you must:

- Identify the career pathways/job(s) you are preparing students for; and
- Through labor market data, business and trade publications, and employer feedback, determine if there is adequate local labor market demand to support a new program

Of course, there are other items to consider before moving ahead, like whether you have the right facilities available and teachers, with the appropriate content knowledge and skills to develop the program and provide instruction. This guide will help you through the process of establishing the viability of a proposed program as it relates to labor market demand.

What does “in-demand” mean?

This rubric considers the following demand criteria:

- **SIZE.** There is an adequate number of jobs in New York City to employ program graduates.
- **WAGES.** The entry-level and median-level wages are greater than or equal to the median for occupations requiring the same amount of education.
- **OUTLOOK.** It is projected to remain stable or grow in the next several years
- **INDUSTRY NEED.** Several employers believe that they have a need that can be filled by CTE program graduates in the short or medium term and those employers are interested in working with your school or the NYCDOE

You may want to consider other criteria, such as opportunities for bilingual students or for students with specific types of disabilities, opportunities for jobs within a specific borough or neighborhood area, and so forth. These should be considered *in addition to* rather than instead of the criteria listed above.

Determining what is in demand is not an exact science. You may find that a given occupation fits some, but not all of the criteria listed above, and still be able to make the case that it is a good fit for a CTE program. It is important to evaluate your findings fairly. If your program is not targeting an in-demand occupation, be open to exploring if there are other closely related occupations that are in demand or to the possibility that your program may not be a good fit for a CTE program right now.

STEP 1. FIND THE OCCUPATION NAME(s) AND CODE(s)

First, identify which occupation or occupations are most closely linked to your proposed program. Wherever possible, identify at least one that will be available to students immediately upon graduation from high school and at least one that will be available to students after they have attained additional education or training after high school.

1. **Speak with an employer partner or look the job up on the Internet to get some ideas about what it is called in the local labor market.**
2. **Go to [O*NET Online](https://www.onetonline.org) and type the job title at the top right-hand side of the page.**
(<https://www.onetonline.org>)


In this example, we typed in “MASTER ELECTRICIAN.”

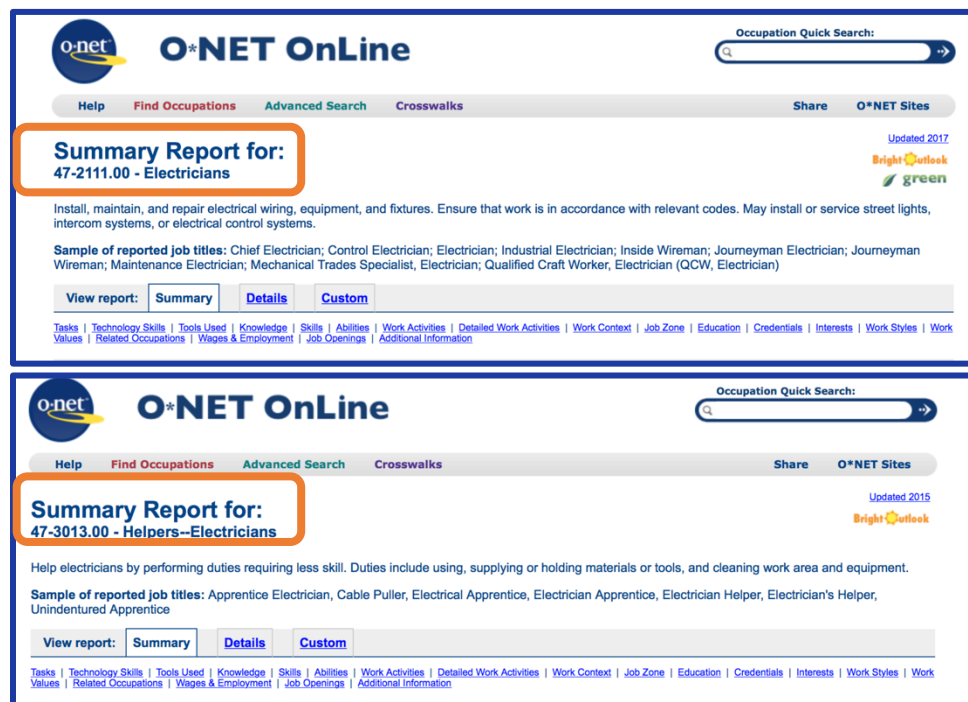


3. **O*NET will return a list of occupations that are most closely related to the title you typed.**

In this example, O*NET returned dozens of titles, including [ELECTRICIANS](#), [ELECTRICAL ENGINEERS](#), [ELECTRICAL ENGINEERING TECHNICIANS](#), and [HELPERS—ELECTRICIANS](#).

4. **Click on the links and read the brief descriptions of the listed occupations until you find the one(s) that seem(s) the closest.**

5. If at first you do not see something that fits, you can also try clicking on the **Related Occupations** link near the top of the page.
6. If the summary report has  an icon at the top, the job is in strong demand at the national level. This is good to note. Keep in mind, however, that it is more important to establish that the occupation is in demand in New York City.
7. On the demand rubric, attached to this guide, write the title and code number (the last two digits are not necessary for our purposes). Write “bright outlook” too if applicable.



In our example, we fill out the Demand Rubric (also found in Appendix A) like this:

Date	JUNE 2017	
Occupation Name	Electricians	Helpers—Electricians
Standard Occupation Code	47-2111	47-3103
O*NET Bright Outlook	Yes	Yes

STEP 2. GET THE DEMAND DATA

1. SIZE.

- a. Go to New York State Department of Labor’s Occupational Employment Statistics webpage. <https://labor.ny.gov/stats/lswage2.asp>



- b. Find the “Select a Region” button, and pick New York City. Click Submit. After the page reloads, scroll down and you will see:

Occupational Wages for the New York City Region

[Excel version](#)

[CSV version](#)

- c. Find the occupation(s) you identified in the list and write down the employment and wages.

HINT: If you hold down the CTRL and F keys at the same time, you can search for any word on the page.

SOC Code	Title	Employment	Annual Wages (\$)			
			Mean	Median	Entry ¹	Experienced ²
47-2081	Drywall and Ceiling Tile Installers	1,210	\$79,930	\$80,650	\$41,320	\$99,230
47-2082	Tapers	250	\$70,270	\$70,890	\$48,080	\$81,360
47-2111	Electricians	20,000	\$82,210	\$85,470	\$44,070	\$101,280
47-2121	Glaziers	1,080	\$61,710	\$62,950	\$24,450	\$80,340
47-2131	Insulation Workers, Floor, Ceiling, and Wall	n/a	\$66,160	\$71,890	\$31,450	\$83,510
47-2132	Insulation Workers, Mechanical	n/a	\$121,520	\$145,080	\$68,320	\$148,110
47-2141	Painters, Construction and Maintenance	5,930	\$57,050	\$53,090	\$29,540	\$70,800
47-2142	Paperhangers	n/a	\$40,790	\$35,190	\$23,500	\$49,440

In our **ELECTRICIAN** example, we write down the following information:

Date	JUNE 2017			
Occupation	ELECTRICIANS		HELPERS—ELECTRICIANS	
Code	47-2111		47-3103	
O*NET Bright Outlook	YES		YES	
LEVEL 1. High school diploma or its equivalent or less				
LEVEL 2. Some college, postsecondary nondegree award, or associate degree				
LEVEL 3. Bachelor's degree or more				
Employment	20,000	X	3,530	X
Entry Wage	\$44,070		\$25,150	
Median Wage	\$85,470		\$32,080	

d. Now, you need to determine if occupational employment is large enough to justify a new program. This will depend on two factors. Use the higher of the two numbers below:

- The number of students you plan to serve. There should be at least 10 jobs for every student you plan to serve.
- The number of other CTE programs there are for the same occupation. There should be at least 1,500 jobs for every program that exists. Use the table below as a rule of thumb. (See Appendix B for a list of current programs by occupation.)

# CTE Programs	Employment Threshold
0	1,500
1	3,000
2	4,500
3	6,000
4	7,500
5	9,000

In the **ELECTRICIAN** example, we want to serve 30 students per year and there is one other program. There should be at least 3,000 jobs in each occupation. Since the occupations meet our criteria, we would add fill out the demand rubric like this.

Date JUNE 2017			
Occupation Name	ELECTRICIANS		HELPERS—ELECTRICIANS
Standard Occupation Code	47-2111		47-3103
O*NET Bright Outlook	YES		YES
LEVEL 1. High school diploma or its equivalent or less			
LEVEL 2. Some college, postsecondary non-degree award, or associate degree			
LEVEL 3. Bachelor's degree or more			
Employment	20,000	X	3,530 X
Entry Wage	\$44,070		\$25,150
Median Wage	\$85,470		\$32,080

2. **WAGES.** The wages should be equal to or greater than the median for occupations that require the same level of education.

- a. First you need to identify the required education. This can be found at the Bureau of Labor Statistics [webpage](#) or https://www.bls.gov/emp/ep_table_112.htm.

**REMEMBER: HOLDING THE CTRL AND F KEYS AT THE SAME TIME
ALLOWS YOU TO SEARCH THE PAGE FOR YOUR OCCUPATION.**

ELECTRICIANS are required to have a postsecondary non-degree award and **HELPERS—ELECTRICIANS** are required to have a high school diploma or its equivalent.

- b. Now you need to see if the wages meet the criteria. Here are the median wages in New York City as of June 2017.

	ENTRY	MEDIAN
HS diploma or equivalent or less	\$21,115	\$30,630
Some college, postsecondary non-degree award, or associate degree	\$28,700	\$43,510
Bachelor's degree or more	\$68,570	\$101,530

In our example, the **ELECTRICIANS** meet both criteria. Their entry wage is \$44,070, which is greater than \$28,700 and their median wage is \$85,460, which is greater than \$43,510. **HELPERS—ELECTRICIANS'** entry wage is \$25,150, which is greater than \$21,115 and their median wage is \$32,080, which is greater than \$30,630. We fill out the demand rubric as follows:

Date	JUNE 2017			
Occupation Name	ELECTRICIANS		HELPERS—ELECTRICIANS	
Standard Occupation Code	47-2111		47-3103	
O*NET Bright Outlook	YES		YES	
LEVEL 1. High school diploma or its equivalent or less			X	
LEVEL 2. Some college, postsecondary non-degree award, or associate degree	X			
LEVEL 3. Bachelor's degree or more				
Employment	20,000	X	3,530	X
Entry Wage	\$44,070	X	\$25,150	X
Median Wage	\$85,470	X	\$32,080	X

3. **OUTLOOK.** Now you need to find out if employment in the occupation is expected to remain stable or grow.

- Go to the New York State Department of Labor's Employment Projections webpage. (<https://www.labor.ny.gov/stats/lspoj.shtm>)
- Long-Term Occupational Employment Projections are at the top of the page. Scroll down find the hyperlink to Statewide and Regional Projections and download the file.
- Open the file. It's very important that you find and click on the "New York City" tab. Otherwise, you'll be looking at projections for the wrong part of the state!

New York State Department of Labor Long-Term Occupational Employment Projections, 2012-2022 New York City													
Summary Level	SOC Code ¹	Title	Employment		Change		Annual Average Openings			Annual Wages (\$) - 2015 ²			
			2012	2022	Net	Percent	Total	Growth	Replacement	Mean	Median	Entry ³	Experienced ⁴
512	4	47-2081 Drywall and Ceiling Tile Installers	1,300	1,420	120	9.2%	20	10	10	n/a	n/a	n/a	n/a
513	4	47-2082 Tapers	860	930	70	8.1%	20	10	10	\$73,890	\$82,720	\$49,420	\$86,130
514	4	47-2111 Electricians	17,870	21,160	3,290	18.4%	670	330	340	\$78,100	\$77,470	\$42,340	\$95,980
515	4	47-2121 Glaziers	1,540	1,760	220	14.3%	80	20	40	\$48,460	\$38,780	\$24,940	\$60,220
516	4	47-2132 Insulation Workers, Mechanical	350	520	170	48.6%	30	20	10	n/a	n/a	n/a	n/a
517	4	47-2141 Painters, Construction and Maintenance	9,550	11,020	1,470	15.4%	300	150	150	\$53,590	\$47,110	\$29,880	\$65,440
518	4	47-2152 Plumbers, Pipefitters, and Steamfitters	8,810	10,390	1,580	17.9%	270	160	110	\$74,090	\$71,060	\$39,840	\$91,220
519	4	47-2161 Plasterers and Stucco Masons	460	480	20	4.3%	0	0	0	\$77,050	\$83,240	\$53,720	\$88,710
520	4	47-2181 Roofers	1,080	1,170	90	8.3%	30	10	20	n/a	n/a	n/a	n/a
521	4	47-2211 Sheet Metal Workers	2,160	2,480	320	14.8%	70	30	40	\$74,880	\$61,220	\$46,190	\$89,230
522	4	47-2221 Structural Iron and Steel Workers	1,700	1,900	200	11.8%	80	20	60	\$88,490	\$92,790	\$59,850	\$102,810
523	4	47-3011 Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	720	980	260	36.1%	40	30	10	\$33,700	\$24,980	\$22,150	\$39,470
524	4	47-3012 Helpers—Carpenters	700	800	100	14.3%	20	10	10	\$27,670	\$25,820	\$20,570	\$31,220
525	4	47-3013 Helpers—Electricians	2,790	3,560	770	27.6%	120	80	40	\$33,400	\$31,760	\$21,170	\$39,520
526	4	47-3015 Helpers—Pipefitters, Plumbers, Pipefitters, and Steamfitters	2,060	2,530	470	22.8%	80	50	30	\$32,480	\$27,710	\$21,850	\$37,790
527	3	47-4000 Other Construction and Related Workers	9,990	11,460	1,470	14.7%	360	150	210	n/a	n/a	n/a	n/a
528	4	47-4011 Construction and Building Inspectors	2,630	2,870	240	9.1%	80	20	60	\$70,790	\$67,990	\$47,600	\$82,390

In our example, employment for **ELECTRICIANS** is expected to grow by 18.4 percent and employment for **HELPERS—ELECTRICIANS** is expected to grow by 27.6 percent. They both meet the outlook criterion. (Note: we don't use the employment or wages from this spreadsheet because they are out of date.)

- Fill out the demand rubric using the information for your occupation(s) like this.

Date: JUNE 2017			
Occupation Name	ELECTRICIANS		HELPERS—ELECTRICIANS
Standard Occupation Code	47-2111		47-3103
O*NET Bright Outlook	YES		YES
LEVEL 1. High school diploma or its equivalent or less			X
LEVEL 2. Some college, postsecondary nondegree award, or associate degree	X		
LEVEL 3. Bachelor's degree or more			
Employment	20,000	X	3,530 X

Entry Wage	\$44,070	X	\$25,150	X
Median Wage	\$85,470	X	\$32,080	X
Projected Employment Change	18.4%	X	27.6%	X

4. INDUSTRY NEED. Now, you should find other evidence that there is a need for workers in your selected occupation. You can find this information by:

- a. Reading the business pages (e.g., New York Times, Wall Street Journal, Crain’s) or trade publications (published by trade or industry associations). It’s important that whatever information you find is current.
- b. Speaking directly with industry employers:
 - Identify industry experts and employers. If you don’t know someone, start asking around. Use your “six degrees of separation!”
 - Contact them and ask them if they would be willing to speak with you about current and future demand in the occupations related to your program. When you speak with them, ask them if they would mind if you listed their name or company in your application.

In the [ELECTRICIAN](#) example, we found an article in the National Association of Home Builders and speak with three electrical contractors and complete the Demand Rubric below:

Date: JUNE 2017				
Occupation Name	ELECTRICIANS		HELPERS—ELECTRICIANS	
Standard Occupation Code	47-2111		47-3103	
O*NET Bright Outlook	YES		YES	
LEVEL 1. High school diploma or its equivalent or less			X	
LEVEL 2. Some college, postsecondary nondegree award, or associate degree	X			
LEVEL 3. Bachelor’s degree or more				
Employment	20,000	X	3,530	X
Entry Wage	\$44,070	X	\$25,150	X
Median Wage	\$85,470	X	\$32,080	X
Projected Employment Change	18.4%	X	27.6%	X
Industry Demand: A 2016 survey by the National Association of Home Builders found that 22% of home builders in the northeast cited serious or some shortages of electricians (Housing Market Index: Special Questions on Labor and Subcontractors’ Availability, 2016). The owners of ABC, DEF, and XYZ Contracting believed that electrician labor force is aging and shared that they have had to				

raise wages to attract qualified candidates. The local labor union is interested in working with our school to qualify as a pre-apprenticeship program.

STEP 3. ASSESS YOUR FINDINGS

The last step is to look at your results as a whole. Do they suggest that there will be sufficient demand for good paying jobs in the near term and the years to come?

If the answer is yes, then you have better sense of the information you can share with potential program stakeholders such as school staff, families and students.

If the answer is no, then share this information with school stakeholders to revisit potential program offerings. If your program is not targeting an in-demand occupation, be open to exploring if there are other closely related occupations that are in demand or to the possibility that your program may not be a good fit for a CTE program right now.

APPENDIX A.

2017-2018 CTE PROGRAM DEMAND RUBRIC

Complete one for each relevant occupation

Date:		
Occupation Name		
Standard Occupation Code		
O*NET Bright Outlook		
LEVEL 1. High school diploma or its equivalent or less		
LEVEL 2. Some college, postsecondary non-degree award, or associate degree		
LEVEL 3. Bachelor's degree or more		
Employment		
Entry Wage		
Median Wage		
Projected Employment Change		
Industry Demand		