

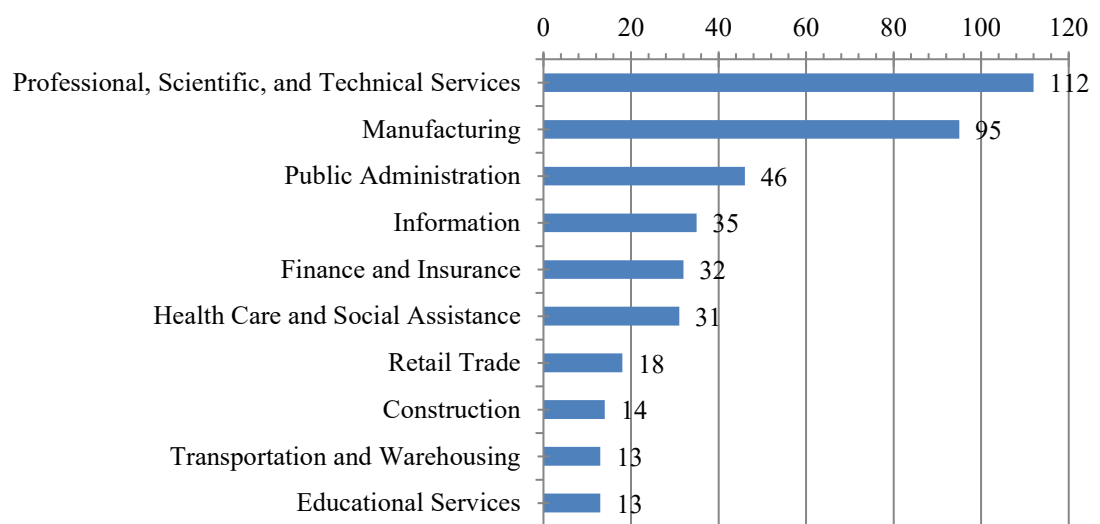
CTE LABOR MARKET TOOL

OVERVIEW: THIS RESOURCE PROVIDES DATA SNAPSHOTS AND INSIGHTS ABOUT THE ENGINEERING & ARCHITECTURE LABOR MARKET,* AND SOME GUIDING QUESTIONS TO HELP APPLY THE DATA TO YOUR SCHOOL'S CTE PROGRAM.

Why use this resource?

- Use as a critical tool with your school's self study group to guide program planning and improvement aligned to labor market data
- Use as a critical tool to prepare students for postsecondary planning towards high-demand careers
- Feel prepared and confident when responding to NYSED questions about incorporating labor market data into your work

Chart 1: Types of organizations doing the most entry-level hiring in engineering & architecture, NYC, number of job ads, 10/1/2020 - 3/31/2021**



The chart above shows the many different kinds of NYC organizations hiring professionals in engineering and architecture.

The chart below shows the long-term employment projections for this field. As you can see, the field is expected to grow by 13.7% between 2016 - 2026, with engineer occupations slightly outpacing others. It's important to keep in mind that even though these predictions help us understand the labor market's trajectory, things like new technologies or innovations, shifts in the economy, or major unexpected shocks like the COVID-19 pandemic, can impact the accuracy of these predictions.



Chart 2: Long-term employment projections for engineering and architecture, NYC, 2016-2026***

	Projected NYC employment:		Change over time:	
	2016	2026	Net	Percent
Architects, Surveyors, and Cartographers	13,070	14,370	1,300	9.9%
Engineers	18,840	21,830	2,990	15.9%
Drafters, Engineering Technicians, and Mapping Technicians	9,690	11,080	1,390	14.3%
Engineering & architecture occupations overall	41,600	47,280	5,680	13.7%

IN THIS RESOURCE...

LOOKING DEEPER: WHO'S WORKING IN THIS FIELD? (P.2)

DEMYSTIFYING DEMAND: EMPLOYER PRIORITIES (P.3)

WHAT NEXT? GUIDING QUESTIONS & WEB RESOURCES (P.4)

Looking Deeper: Who Works in this Field?

- **Most people working in this field in NYC have a significant amount of formal education and earn above a living wage.**
- For the vast majority of engineering and architecture occupations (82%), the most commonly-held educational credential by workers in NYC is a Bachelor's degree.
- There is significant opportunity in this field for people who have a Bachelor's degree and are just starting out their career. Most recent hiring in NYC sought candidates with 5 years or less of experience (71% of job ads during the six-month period of October 2020 – March 2021).
- Median wages for entry-level through experienced professionals in this field are significantly above \$45,285, the 2021 living wage for a single adult in New York City*****.

Chart 3: Years of experience of people being hired in this field, based on job ads, NYC, 10/1/2020 - 3/31/2021**

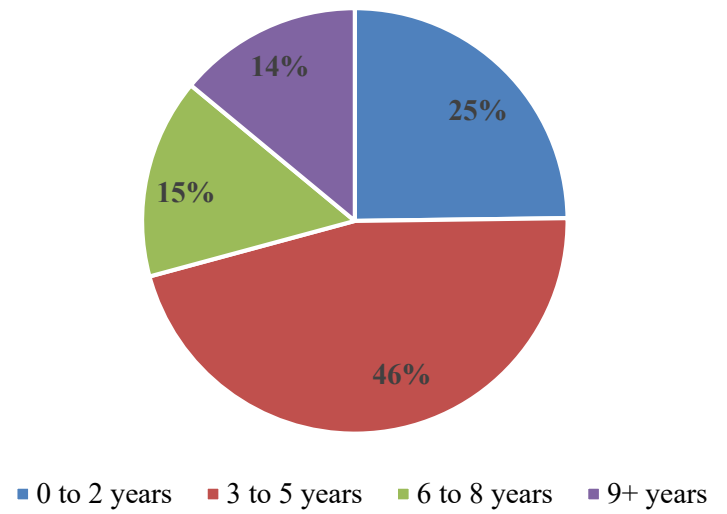


Chart 4: Median wages in this field by experience**, NYC**

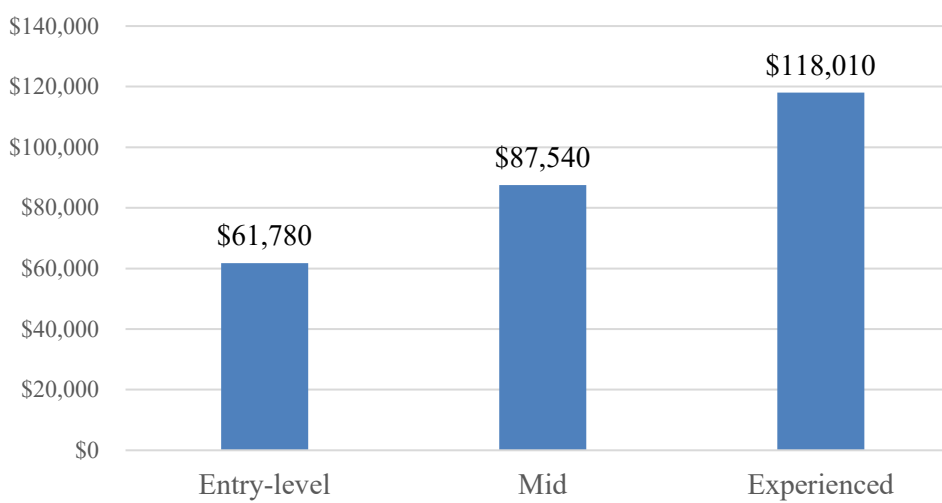
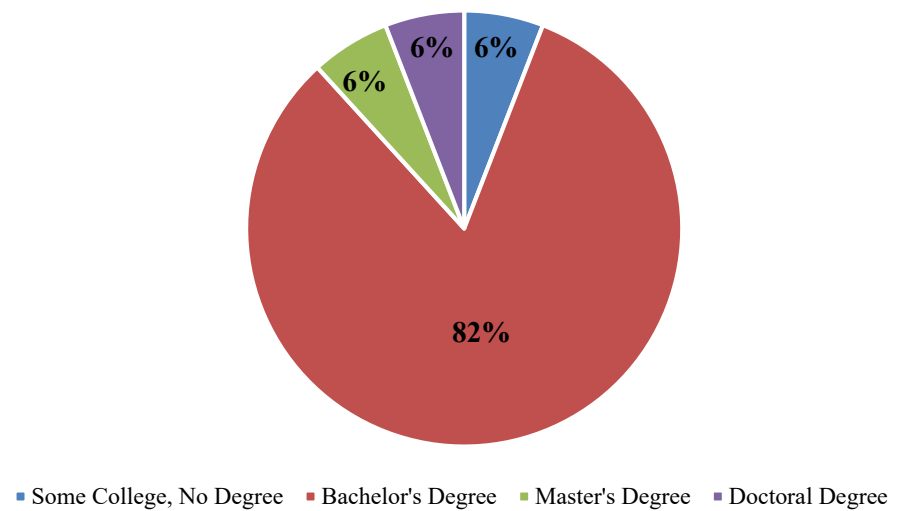


Chart 5: Most commonly-held educational credential for engineering & architecture occupations, NYC*****



The chart below reflects the gender and ethnicity of people who work in the largest three occupations within this field in NYC*****. Demographic distributions reflect a significant opportunity for educators, employers, and training providers to help diversify a set of well-paying occupations that are predominantly held by white males.

Chart 6: Gender and ethnicity distributions for top 3 occupations in this field in NYC

Occupation	NYC Emp.	Ethnicity %						Gender %	
		American Indian/Alaska Native	Asian/Pacific Islander	Black	Hispanic	White	Multi-ethnic/Other	Female	Male
Architects, Except Landscape and Naval	8,890	0	20	4	11	59	6	34	66
Civil Engineers	7,350	1	23	9	13	53	1	16	84
Architectural and Civil Drafters	3,640	0	8	9	27	50	6	34	66

Demystifying Demand: Employer Priorities

➤ In this field, certifications may be less important than formal training and educational attainment for entry-level employees to secure a job in NYC.

➤ The majority of employers seeking to hire an entry-level engineering & architecture professional are seeking someone with at least a Bachelor's degree.

➤ Employers across fields are interested in entry-level workers having skills that emphasize foundational computer literacy, communication, and collaboration.

➤ Most employers (72%) did not include any certifications in their job postings. For those who did, driver's license was by far the most common.

Chart 7: Minimum education levels sought in engineering and architecture for entry-level workers, number of job ads, NYC, 10/1/2020 - 3/31/2021**

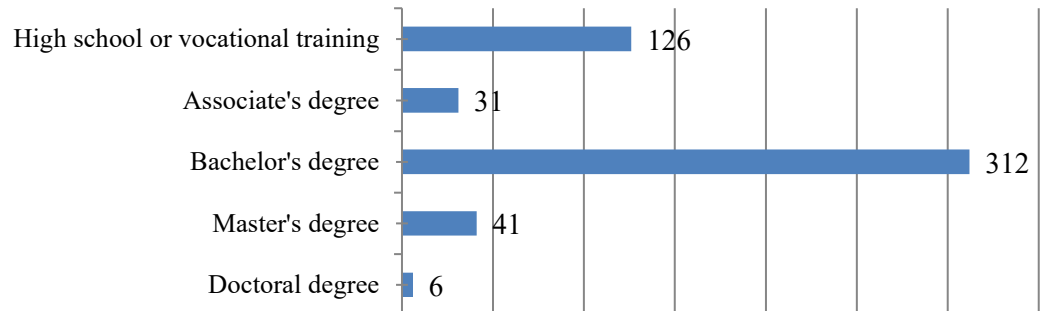


Chart 8: In-demand transferable*** skills, entry-level job ads**, NYC, 10/1/2020 - 3/31/2021**

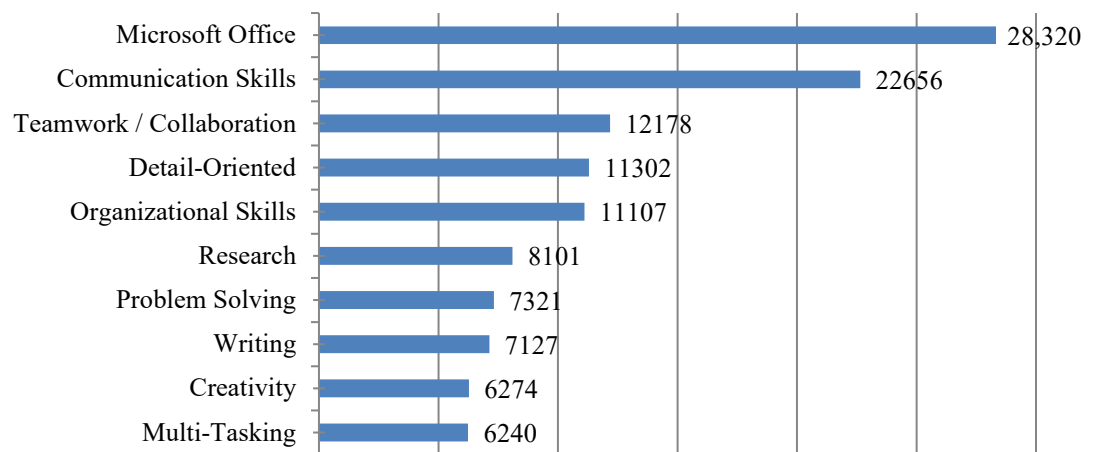
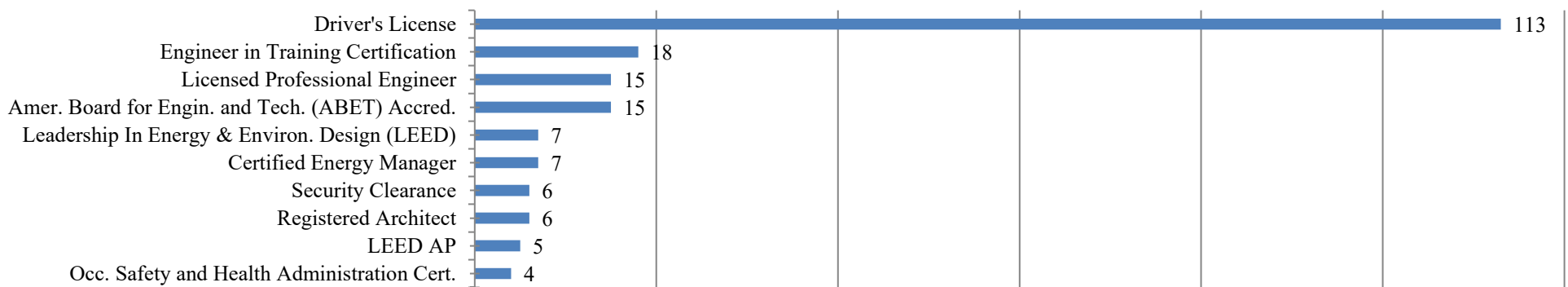


Chart 9: Certifications in greatest demand for entry-level workers in engineering & architecture, number of mentions in job ads, NYC, 10/1/2020 - 3/31/2021**



Charts 10-12: Entry-level "work from home" (WFH) opportunities in this field, job ads, 4/1/2020 – 3/31/2021**

Chart 10: This field's WFH job ads, growth by metropolitan statistical area (MSA):

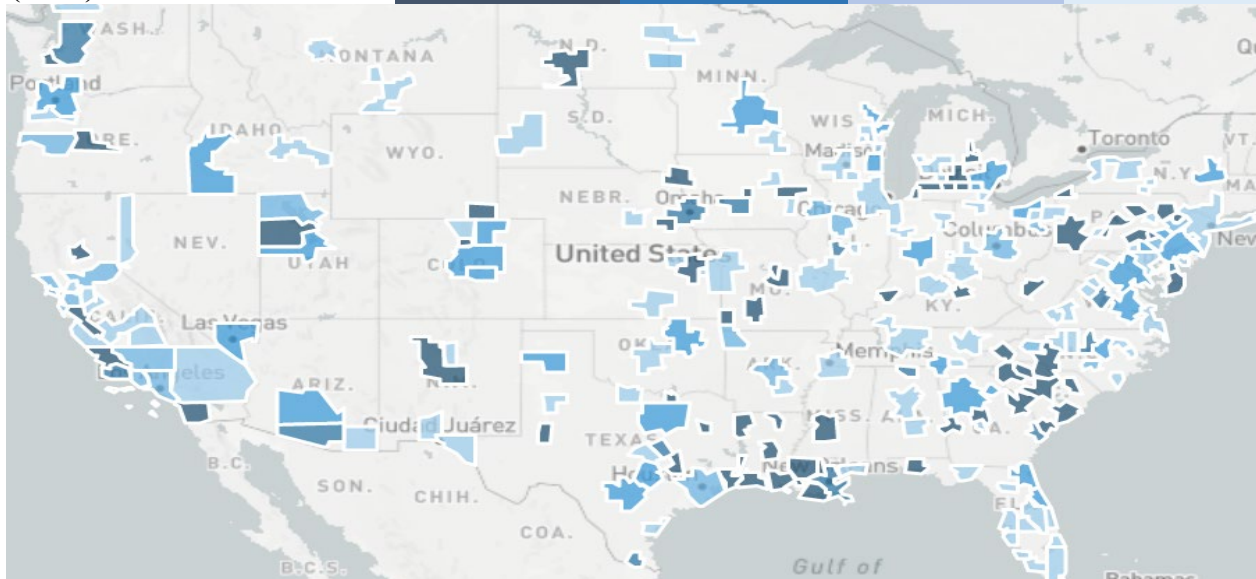
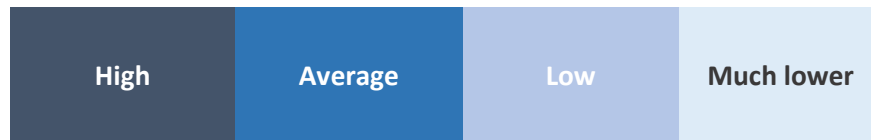


Chart 11: MSAs with most employers posting WFH ads overall

Metro Statistical Area	Job Ads
Dallas-Fort Worth-Arlington, TX	81
Washington-Arlington-Alexandria, DC-VA-MD-WV	76
Los Angeles-Long Beach-Anaheim, CA	74

Chart 12: Engineering & architecture occupations with most WFH ads

Occupation	Job Ads
Engineering Technicians, Except Drafters, General/unspecified	267
Civil Engineers	189
Industrial Engineering Technicians	150

What Next? Guiding Questions & Web Resources

“Describe how current labor market data has informed program design and choice of technical assessment.”

The prompts below are designed to promote discussion and ideas for program planning, and to help you answer the question above from the CTS self study tab and the NYSED CTE application (Part 2, Section C).

How can we incorporate this report’s data insights into our...	Data points to consider:
<i>...program content?</i>	Charts 2, 4, 5, 8, 9
<i>...employability profile?</i>	Charts 8, 9
<i>...articulation agreement and, if applicable, affiliation agreement?</i>	Charts 5, 7, 9
<i>...work-based learning?</i>	Charts 1, 8
<i>...technical assessments?</i>	Chart 9
<i>...faculty certification and, if applicable, professional licensures?</i>	Charts 8, 9

Consider the questions below keeping in mind the labor market data points you’ve explored in this report and the questions that you’ve answered above.

Select three ways that you might adjust your program in response to labor market data:

- Program content
 Employability profile
 Articulation agreement
 Technical assessments
 Work-based learning
 Faculty certification
 Other: _____

Which one of these three adjustments could most easily be implemented this school year?

Which one of the three would make the biggest difference for the quality of our program? Why?

Curious to explore more? Check out these web resources:

- CTE NYC website: www.cte.nyc
- CTE Industry Commission resources: bitly.com/CTEIndustryEngagement
- CTE College and Career Planning Team's postsecondary milestones toolkit: bit.ly/2O2QIGn
- CareerOneStop labor market data explorer: www.careeronestop.org

Technical Notes & Data Sources:

* “Engineering and architecture” occupations have been operationalized as occupations with a 2010 Standard Occupation Classification (SOC) code starting with the two-digit “17” (“Architecture and Engineering Occupations”): 17-1XXX for Architects, Surveyors, and Cartographers; 17-2XXX for Engineers; and 17-3XXX for Drafters, Engineering Technicians, and Mapping Technicians.

** These analyses were conducted using the Burning Glass Labor Insight proprietary web-based research platform. The data include job ads posted by recruiting firms.

*** New York City 2016-2026 long-term employment projections are determined by New York State Department of Labor (NYSDOL).

**** NYSDOL, Occupational Employment Statistics (OES) estimates for New York City, first quarter of 2020 (May 2020 release). NYSDOL operationalizes “Entry Wage” as the average of the bottom third of wages, “Mid” as median wages, and “Experienced Wage” as the average of the top two thirds of wages.

***** U.S. Census, American Community Survey (ACS) estimates, NYC 2015-2019 5-year sample, IPUMS release February 2021.

***** Massachusetts Institute of Technology’s (MIT) Living Wage calculator, 2021 estimates for New York City

***** Demographics based on U.S. Census, American Community Survey (ACS) estimates, NYC 2015-2019 5-year sample, IPUMS release February 2021. Employment estimates are from NYSDOL OES (May 2020 release).

***** “Transferable skills” are defined as “skills used in one job or career that can also be used in another” (Cambridge Business English Dictionary, <https://dictionary.cambridge.org/us/dictionary/english/>)