Technical Notes

The Kentucky Apprenticeship Report is produced by the Kentucky Center for Statistics (KYSTATS) utilizing data from the Kentucky Longitudinal Data System (KLDS). Data sources leveraged for this report include data from: Department of Workforce Development (DWD) and Kentucky Unemployment Insurance (UI).

Occasionally, data from one source will not conform to data from another source because of differences in cohorts, how variables are defined, how variables are calculated, the treatment of missing data, and other factors. This means that data published in this report may not be comparable to data published in other reports. For specific details about metric formulas, please refer to Appendix A. Some values are redacted to preserve individual privacy and conform to state laws. Redaction rules can be found in Appendix B.

Apprenticeship participation and completion data in this report are derived from the Registered Apprenticeship Partners Information Database System (RAPIDS) data included within the KLDS. This program is coordinated by the U.S. Department of Labor and the Kentucky Department of Workforce Development. Employment and wage outcome data includes only those firms covered by the UI System.

Questions this report can answer:

1. What percentage of apprentices are being employed after completion?
2. How do wages for apprentices look one- to ten-years after completion from the program?
3. How many apprentices start, continue, and complete their apprenticeship program each year?
4. What are the demographic compositions of apprentices by program status?

The Kentucky Apprenticeship Report allows filtering by federal fiscal year (year of the program), apprenticeship status, and demographic.

KENTUCKY APPRENTICESHIP REPORT

This dashboard is powered by the Kentucky Center for Statistics in collaboration with the Kentucky Department of Workforce Development. This dashboard summarizes program data entered or uploaded into the Registered Apprenticeship Partners Information Database System (RAPIDS). Overall wage data available for apprentices has been tied to the RAPIDS data. Additionally, the U.S. Department of Labor is developing a national apprenticeship dashboard at: https://www.apprenticeship.gov/data-and-statistics

Those using screen readers may need to click the enter key to select options in filters. This dashboard is best viewed on a desktop computer. If you have any questions regarding accessibility, please contact kystats@ky.gov. Follow us @KYSTATS on social media.

An alternative, accessible format in Excel is available for download here: https://kystats.ky.gov/Content/Reports/PublicAccessDataFiles/APR_PAF.xlsx

Technical documentation can be found in PDF form here: https://kystats.ky.gov/Content/Reports/APR_Tech_Notes.pdf

Apprenticeship Counts By Status

Apprentice Status
New

Apprentice Counts by FFY

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Apprentice Count	709	692	781	1,153	1,398	1,199	1,462	2,050	2,665	1,761	2,128	2,776	3,017
Year Over Year % Growth		-2% ▼	13% ▲	48% ▲	21% ▲	-14% ▼	22% ▲	40% ▲	30% ▲	-34% ▼	21% ▲	30% ▲	9% ▲
Growth from 2011	0% ▲	-2% ▼	10% ▲	63% ▲	97% ▲	69% ▲	106% ▲	189% ▲	276% ▲	148% ▲	200% ▲	292% ▲	326% ▲

Table shows apprenticeship counts for all of Kentucky by program year, and the percentage growth year over year and since 2011.

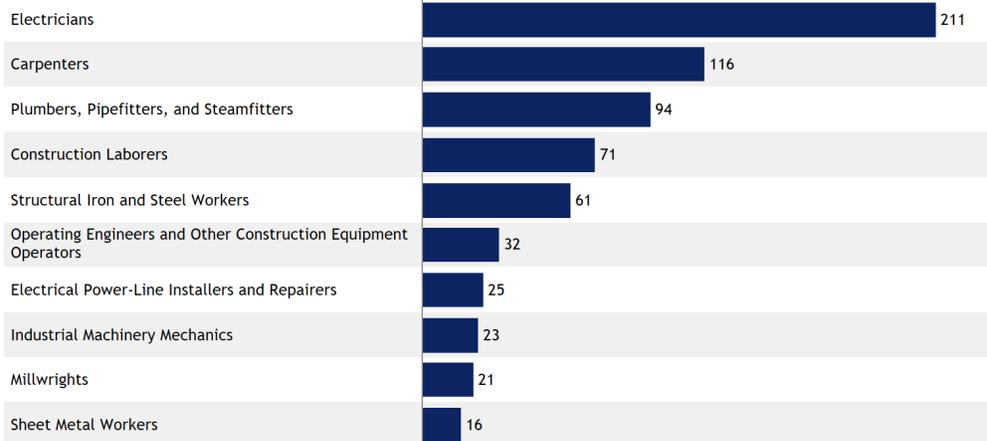**Select Federal Fiscal Year (FFY 2011-2023)**
2011

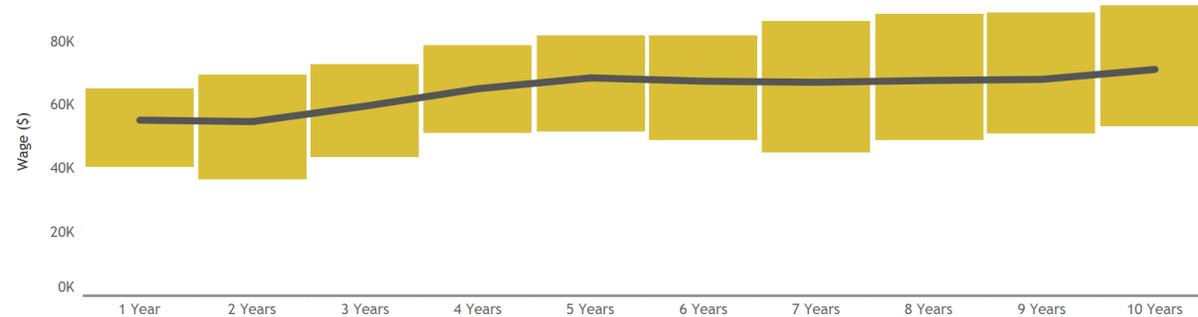**Kentucky Overall: 2011**

Top Demographic Subgroups by Count

709

Demographic
- Kentucky Overall
- Major Industry
- ⦿ SOC Occupation Title
- Age Cohort
- Education
- Ethnicity
- Race
- Gender
- Veteran Status

Subgroup	Count
Electricians	211
Carpenters	116
Plumbers, Pipefitters, and Steamfitters	94
Construction Laborers	71
Structural Iron and Steel Workers	61
Operating Engineers and Other Construction Equipment Operators	32
Electrical Power-Line Installers and Repairers	25
Industrial Machinery Mechanics	23
Millwrights	21
Sheet Metal Workers	16

The redacted values for Major Industry and SOC Occupation Title subgroups have been removed from the graph.

Apprenticeship Post-Completion Wage Overview

Wages by Years Post-Completion

Employment Summary Post-Completion

	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
Median Wage	$55,366	$54,908	$59,772	$65,247	$68,646	$67,598	$67,260	$67,830	$68,179	$71,295
Employment	293	288	290	282	282	268	270	257	248	241
Employment Percentage	88%	86%	87%	84%	84%	80%	81%	77%	74%	72%
Percentage Same Industry	62%	58%	57%	55%	54%	50%	50%	47%	45%	43%

Users can access the Public Access File by clicking the public access file link, which is a downloadable excel file with the aggregate data used in the report. Technical Notes can be accessed by clicking the technical notes link, which define the terminology and methods of analysis in the report.

The Kentucky Apprenticeship Report is comprised of two sections: Apprenticeship Counts by Status and Apprenticeship Post-Completion Wage Overview. Both sections can be filtered to a specific Federal Fiscal Year (FFY) via the Federal Fiscal Year filter at the top of the report. This filter will change the apprenticeship program year being visualized in the report.

Apprenticeship Counts by Status
This section starts with a state overview showing total number of apprentices for that program year with the year by year summary to the right of the total. The summary table also includes calculations for year over year percentage growth, and percentage growth from 2011. These visuals can be filtered with the federal fiscal year at the top of the page and the apprenticeship status filter above the Kentucky overall count.

Lastly the bottom graph, Top Demographic Subgroups by Count, displays the breakout of the subgroups for the demographic selected. This bar graph can be filtered to specific demographics with their respective filters to the left of the graph.

Apprenticeship Post-Completion Wage Overview
This section provides an overview for all Kentucky apprenticeship program completers and their associated wages. Any wages available for the apprentices is categorized as one- to ten-years after completion. The bar chart with line graph operates similarly to a box plot. The middle line is showing median wage, and the bars are displaying the inner quartile range from the 25th percentile wage to the 75th percentile wage. Below the dual line and bar chart is a table summarizing median wage, number of apprentices employed after completion, percentage of total completed apprentices employed, and percentage employed in the same industry as their apprenticeship program.

Individuals were considered to be employed in Kentucky if they earned wages at a firm covered by the UI System. The UI System does not include most of the self-employed, most federal employees, the military, or several other smaller categories of employment. While we cannot accurately determine if an apprentice is with the same company they apprenticed for with the current data available, we can compare their major industry from their UI wage data to the major industry from their RAPIDS data. If these two fields match, that apprentice is considered in the same industry as their program and counted towards the measure.

APPENDIX A: METRIC FORMULAS

Data Sources:

Kentucky Longitudinal Data System: KYSTATS collects and links data to evaluate education and workforce efforts in the Commonwealth. These data are maintained by KYSTATS in Kentucky's longitudinal data system (KLDS). Information is only attributed to the KLDS when it is derived from multiple data sources through a series of primacy rules. All other data maintained within the KLDS are attributed to the original data source.

Department for Workforce Development: The Department of Workforce Development (DWD) connects Kentuckians to employment, workforce information, education, and training. The agencies of the department, the Career Development Office, Office of Vocational Rehabilitation, and the Office of Employer and Apprenticeship Services work together to provide services through the Kentucky Career Center.

Office of Unemployment Insurance (UI): This system contains information on all wages and employment covered by the Kentucky Education and Labor Cabinet Unemployment Insurance System. This is estimated to cover 90% of employment in Kentucky. Annualized wages are based on the Federal Fiscal Year (FFY), which runs from October 1st through September 30th. For instance, the 2018 FFY encompasses the time period of October 1, 2017 through September 30, 2018.

Data Metrics:

Kentucky Overall

Apprenticeship: Completers - Those who completed an apprenticeship.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CO'*

Apprenticeship: Active - Federal fiscal years individuals are active in their apprenticeship program. Active status includes Cancelled, Completed, Registered, Reinstated, Suspended, Incomplete Registration, and Duplicate.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CA', 'CO', 'RE', 'RI', 'SU', 'DR', 'IR', 'DU'*

Apprenticeship: New - Those who have started in an apprenticeship (first year). New status include Cancelled, Completed, Registered, Reinstated, Suspended, Incomplete Registration, and Duplicate.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CA', 'CO', 'RE', 'RI', 'SU', 'DR', 'IR', 'DU'*

Apprentice Counts by FFY

Apprenticeship Count: Count of apprentices filtered by apprenticeship status.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CA', 'CO', 'RE', 'RI', 'SU', 'DR', 'IR', 'DU'*

Year over Year % Growth: Comparing the growth of apprentices filtered by apprenticeship status to the previous FFY.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CA', 'CO', 'RE', 'RI', 'SU', 'DR', 'IR', 'DU'*
Calculated as: $\frac{Current\ Apprentice\ Count - Previous\ FFY\ Apprentice\ Count}{Previous\ FFY\ Apprentice\ Count}$

Percent Growth From 2011: Comparing the growth of apprentices filtered by apprenticeship status to the 2011 apprentice count.
Data Source: RAPIDS
Data Element: App_Apprentice: *ApprStatus = 'CA', 'CO', 'RE', 'RI', 'SU', 'DR', 'IR', 'DU'*
Calculated as: $\frac{Current\ Apprentice\ Count - 2011\ Apprentice\ Count}{2011\ Apprentice\ Count}$

Top Demographic Subgroups by Count

Demographic: Overall group of demographic category, such as gender or race.
Data Source: KLDS
Data Element: MasterPerson: *CEDS_Race, Gender, CEDS_Ethnicity, Birthyear*; App_Apprentice: *Education, OccCode, Vet*

Apprenticeship Post-Completion Wage Overview

Median Wage One- through Ten-Years Post-Completion - Median Wages are calculated one, two, three, four, five, six, seven, eight, nine, and ten years after completion year and are determined through RAPIDS completion information. Total individual wage is determined by summing all in-state UI covered wages acquired by an individual during the appropriate FFY. Individual wages are used to calculate median wages for all apprentices within Kentucky.
Data Sources: RAPIDS, UI
Data Elements: UI_Wages_Annualized*: FFY, sumWages;* App_Apprentice: *appr_status*

25th Percentile Wage One- through Ten-Years Post-Completion - Median Wages are calculated one, two, three, four, five, six, seven, eight, nine, and ten years after completion year and are determined through RAPIDS completion information. Total individual wage is determined by summing all in-state UI covered wages acquired by an individual during the appropriate FFY. Individual wages are used to calculate median wages for all apprentices within Kentucky.
Data Sources: RAPIDS, UI
Data Elements: UI_Wages_Annualized*: FFY, sumWages;* App_Apprentice: *appr_status*

75th Percentile Wage One- through Ten-Years Post-Completion - Median Wages are calculated one, two, three, four, five, six, seven, eight, nine, and ten years after completion year and are determined through RAPIDS completion information. Total individual wage is determined by summing all in-state UI covered wages acquired by an individual during the appropriate FFY. Individual wages are used to calculate median wages for all apprentices within Kentucky.

Data Sources: RAPIDS, UI
Data Elements: UI_Wages_Annualized*: FFY, sumWages*; App_Apprentice*: appr_status*

Employment Summary Post-Completion

Employment - Employment is current to UI reporting and counts any individual who earned more than zero dollars or was not null for their Annualized Wage. Aggregate totals include all individuals employed at any point in a given quarter.
Data Source: UI
Data Element: UI_Wages

Employment Percentage - Comparing the count of current employment from UI reporting to the total apprentice completers for a given FFY.
Data Source: UI
Data Element: UI_Wages
Calculated as: $\frac{Current\ UI\ Employment}{Total\ Current\ Apprentice\ Completers}$

Percent Same Industry - Compares the major industry from UI to the major industry from RAPIDS. Calculated for one- to ten-years after completion. Major Industries identified using the first two digits of the North American Industry Classification System (NAICS) code and are developed by the Kentucky Workforce Innovation Board (KWIB) in collaboration with Economic Development: Transportation and Logistics (48, 49), Construction and Trade (23), Business and IT Services (42, 51, 52, 54), Health Sciences (62), Advanced Manufacturing (31-33), and Non-Key sectors (All other NAICS).
Data Sources: RAPIDS, UI
Data Elements: UI_Wages:major_industry, FFY, sumWages; App_Program: left(NAICSCode,2)
Calculated as: $\frac{Current\ Major\ Industry\ Same\ Count}{Total\ Current\ Apprentice\ Completers}$

Median Wage One- through Ten-Years Post-Completion - Median Wages are calculated one, two, three, four, five, six, seven, eight, nine, and ten years after completion year and are determined through RAPIDS completion information. Total individual wage is determined by summing all in-state UI covered wages acquired by an individual during the appropriate FFY. Individual wages are used to calculate median wages for all apprentices within Kentucky.
Data Sources: RAPIDS, UI
Data Elements: UI_Wages_Annualized*: FFY, sumWages*; App_Apprentice*: appr_status*

SOC Occupation Title: A craft, trade, profession, or other means of earning a living.
Data Sources: BLS, RAPIDS
Data Element: Occupation Title

APPENDIX B: REDACTION RULES

Redaction Rules

KYSTATS follows strict redaction and suppression guidelines to ensure the privacy of all individuals. The following rules were applied to the Kentucky Apprenticeship Report to redact or mask some of the data based on the small cell-size counts that could be used to identify individuals. In general, categories must have a base denominator of 10 to be present in the report. The sum of all redacted values in a group or groups must be at least 10 as well. More specifically, KYSTATS redacts all values between one and nine and those where the values can be determined by calculations. (For example, by figuring out a value between one and nine by subtracting unredacted from total - If two categories are exhaustive (ex: males and females) and either group has less than 10 students, both groups are redacted.) Zeroes are not redacted.
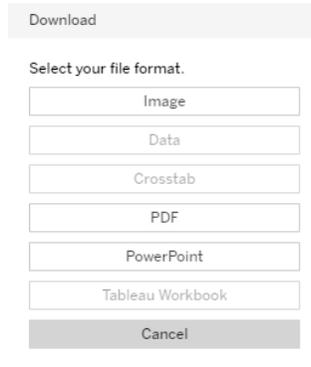
All rules apply at the industry, demographic, and state level. All graphs include data already presented in the report unless otherwise noted. If these data are redacted in the report, they are also redacted in any accompanying charts and graphs.

APPENDIX C: PRINTING

Printing - Download a dashboard to PDF

1. Click Download
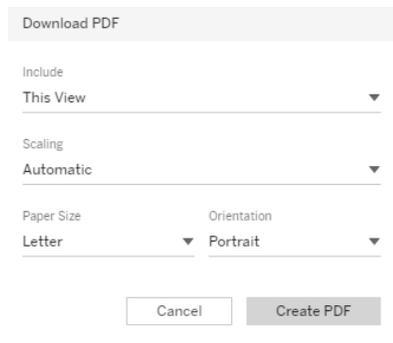
2. On the Download screen – click PDF

3. On the Download PDF screen. Set what you want to include, the scaling paper size, and orientation, **then click create PDF.**

   This View under Include, prints the current page.

   Specific sheets from this dashboard (the displayed page) allows you to select specific sheets.

   Specific sheets from this workbook (select from all dashboards) allows you to select specific workbooks.

4. Once your PDF has been generated. Click **Download.**