

The Economic Value of Career and Technical Education at Citrus College





CITRUS COLLEGE'S CAREER AND TECHNICAL EDUCATION¹ (CTE) programs prepare students for high-wage, in-demand careers. CTE disciplines collaborate with K-12 high school partners and Regional Occupational Programs to offer high school-to-college course articulation pathways that prepare students for college, career training and the workforce. Citrus College's hands-on instruction, industry-informed curriculum and diverse faculty of industry experts build students' skills, experience and confidence to enter meaningful careers in the workforce fueling the San Gabriel Valley and Los Angeles County regional economy. CTE program completers are well prepared to earn certificates and degrees, sit for industry credentials and move directly into employment or continued education. The college's CTE draws students to Los Angeles County, generating new dollars and opportunities for the county. Citrus College's CTE provides students with the training and skills they need to have fulfilling and prosperous careers. Furthermore, Citrus College is a place for CTE students to meet new people, increase their self-confidence, and promote their overall health and well-being.

Citrus College is a member of the Los Angeles Regional Consortium (LARC—LA's 19 community colleges), working collectively through data-informed planning to close the region's skills gap between job seekers and employers. As a member of LARC, Citrus College coordinates regionally and locally to ensure its programs align with employer demand and reflect real labor market needs, creating a seamless pathway to college and career readiness for students. Citrus participates in the state's regional and local Strong Workforce Program, a \$290 million annual investment created to expand access to career technical education and lift more Californians into living-wage jobs.

Citrus College's CTE influences both the lives of its students and the county economy. The college's CTE supports a variety of industries in Los Angeles County, serves businesses in the county, and benefits society as a whole in California from an expanded economy and improved quality of life. Additionally, the benefits created by Citrus College's CTE extend to the state and local government through increased tax revenues and public sector savings.



Los Angeles County, California

Citrus College's CTE influences both the **lives of its students** and the **county economy**.

¹ Career and Technical Education (CTE) is defined at the course level and includes any courses with a CTE Taxonomy of Program code or courses coded A-C (Apprenticeship, Advanced Occupational, and Clearly Occupational).



This study measures the economic impacts created by Citrus College's CTE on the business community and the benefits the college's CTE generates in return for the investments made by its key stakeholder groups—students, taxpayers, and society. The following two analyses are presented:

Economic impact analysis

Investment analysis

All results reflect employee, student, and financial data, provided by the college, for fiscal year (FY) 2024-25.² Impacts on the Los Angeles County economy are reported under the economic impact analysis and are measured in terms of added income. The returns on investment to students, taxpayers, and society in California are reported under the investment analysis.



Citrus College offers CTE programs in the following disciplines:

Accounting • Administration of Justice • Architecture • Automotive Technology • Barbering • Biotechnology, Biomanufacturing • Business • Child Development • Computer Science • Construction Management • Cosmetology • Dental Assisting • Drafting, Design Technology • Drone Technology • Emergency Medical Technician • Emerging Theatre Technologies • Esthetician • Forestry, Wildland Resources • Information Technology, Information Systems • Medium/Heavy Duty Truck Technology • Nursing: Home Health Aide (HHA) • Nursing: Nurse Assistant (CNA) • Nursing: Registered (ADN) • Nursing: Vocational (VN) • Office Technology • Production Management, Engineering Technology • Public Works • Real Estate • Recording Technology • Stationary Power Generation • Water Technology

² Where data were unavailable, Lightcast worked with Citrus College to calculate reasonable estimates.



Economic impact analysis



Citrus College's CTE promotes economic growth in Los Angeles County through its direct expenditures and the resulting expenditures of students and businesses in the county. The college serves as an employer and buyer of goods and services for its day-to-day and construction CTE operations. The college's CTE activities attract students from outside Los Angeles County, whose expenditures benefit county vendors. In addition, Citrus College's CTE is an important source of higher education to Los Angeles County residents and a supplier of trained workers to county industries, enhancing overall productivity in the county workforce.

Operations spending impact



Citrus College's CTE adds economic value to Los Angeles County as an employer of county residents and a large-scale buyer of goods and services. In FY 2024-25, the college employed 516 full-time and part-time CTE faculty and staff, 71% of whom lived in Los Angeles County. Total CTE payroll at Citrus College was \$53.0 million, much of which was spent in the county on groceries, mortgage and rent payments, dining out, and other household expenses. In addition, the college's CTE spent \$24.7 million on expenses related to facilities, supplies, and professional services (excluding construction).³

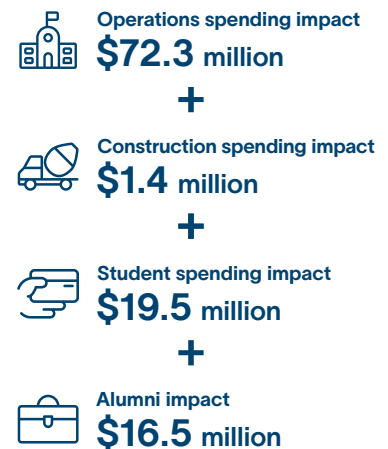
Citrus College's CTE operations spending added **\$72.3 million** in income to the county during the analysis year. This figure represents the college's CTE payroll, the multiplier effects generated by the in-county spending towards CTE, and a downward adjustment to account for funding received from county sources. The \$72.3 million in added income is equivalent to supporting **592 jobs** in the county.

Construction spending impact



Citrus College invests in capital projects each year to maintain its CTE facilities, create additional capacities, and meet its growing educational demands.⁴ While the amount varies from year to year, these quick infusions of income and jobs have a substantial impact on the county economy. In FY 2024-25, Citrus College's CTE-related construction spending generated **\$1.4 million** in added income, which is equivalent to supporting **14 jobs**.

Impacts created by Citrus College's CTE in FY 2024-25



³ Due to data limitations, the number of faculty and staff and revenue and expenditure data were estimated using a proportion based on CTE credits.

⁴ Due to data limitations, construction expenditures were estimated using a proportion based on CTE credits.



Student spending impact



Around 8% of CTE students attending Citrus College originated from outside the county in FY 2024-25, and some of these students relocated to Los Angeles County to attend Citrus College. These students may not have come to the county if the college's CTE did not exist. In addition, some in-county CTE students, referred to as retained students, would have left Los Angeles County if not for the existence of Citrus College's CTE. While attending the college, these relocated and retained CTE students spent money on groceries, accommodation, transportation, and other household expenses. This spending generated **\$19.5 million** in added income for the county economy in FY 2024-25, which supported **233 jobs** in Los Angeles County.

Alumni impact



The education and training Citrus College's CTE provides for county residents has the greatest impact. Since the establishment, students have studied at Citrus College's CTE and entered the county workforce with greater knowledge and new skills. Today, many of Citrus College's former CTE students are employed in Los Angeles County. As a result of their education from Citrus College's CTE, the students receive higher earnings and increase the productivity of the businesses that employ them. In FY 2024-25, Citrus College's CTE alumni generated **\$16.5 million** in added income for the county economy, which is equivalent to supporting **164 jobs**.

Total impact

Citrus College's CTE added **\$109.6 million** in income to the Los Angeles County economy during the analysis year, equal to the sum of the operations and construction spending impacts, the student spending impact, and the alumni impact.

Citrus College's CTE total impact can also be expressed in terms of jobs supported. The \$109.6 million impact supported **1,004 county jobs**, using the jobs-to-sales ratios specific to each industry in the county. In addition, the \$109.6 million, or 1,004 supported jobs, stemmed from different industry sectors. For instance, among non-education industry sectors, the spending of Citrus College's CTE and its students and the activities of its alumni in the Professional & Technical Services industry sector supported 32 jobs in FY 2024-25. If the college's CTE did not exist, these impacts would not have been generated in Los Angeles County.

Citrus College's CTE impacts by industry (jobs supported)



139

Accommodation & Food Services



91

Retail Trade



48

Other Services (except Public Administration)



32

Professional & Technical Services



27

Construction

The **\$109.6 million** total impact supported **1,004 county jobs**.



Investment analysis



An investment analysis evaluates the costs associated with a proposed venture against its expected benefits. The analysis presented here evaluates Citrus College's CTE as an investment from the perspectives of students, taxpayers, and society in California. As with the economic impact analysis, this analysis considers only FY 2024-25 activities.

Student perspective



In FY 2024-25, Citrus College served CTE 6,978 students. CTE students paid for tuition, fees, books, and supplies. They also took out loans and will incur interest on those loans. Additionally, students gave up money they would have otherwise earned had they been working instead of attending college. The total investment made by Citrus College's CTE students in FY 2024-25 amounted to a present value of \$22.1 million, equal to \$8.1 million in out-of-pocket expenses (including future principal and interest on student loans) and \$14.0 million in forgone time and money.

In return for their investment, Citrus College's CTE students will receive a stream of higher future earnings that will continue to grow throughout their working lives. For example, the average CTE associate degree graduate from Citrus College in FY 2024-25 will see annual earnings that are \$10,400 higher than a person with a high school diploma or equivalent working in California.⁵ Over a working lifetime, the benefits of an associate degree over a high school diploma will amount to an undiscounted value of \$436,800 in higher earnings per graduate. The present value of the cumulative higher future earnings that Citrus College's FY 2024-25 CTE students will receive over their working careers is \$183.4 million.

The CTE students' benefit-cost ratio is 8.3. In other words, for every dollar CTE students invest in Citrus College in the form of out-of-pocket expenses and forgone time and money, they will receive a cumulative value of \$8.30 in higher future earnings. Annually,

CTE students see a high rate of return for their investment in Citrus College



Average annual return for Citrus College's CTE students
21.6%



Stock market 30-year average annual return
10.9%

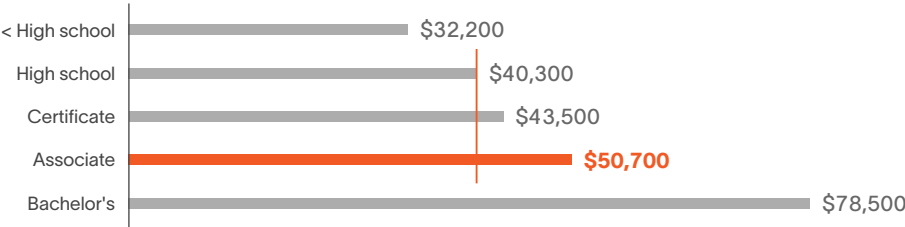


Interest earned on savings account (national deposit rate)
0.5%

Source: Forbes' S&P 500, 1994-2025; FDIC.gov, January 2024

Average earnings by education level at career midpoint

The average CTE associate degree graduate from Citrus College will see an increase in earnings of **\$10,400** each year compared to a person with a high school diploma or equivalent working in California.



Source: Lightcast employment data

⁵ Note earnings at all award levels are weighted by the demographic profile of Citrus College's CTE students.



the CTE students' investment in Citrus College has an average annual internal rate of return of 21.6%, which is impressive compared to the U.S. stock market's 30-year average rate of return of 10.9%.

Taxpayer perspective



Citrus College's CTE generates more in tax revenue than it receives. These benefits to taxpayers consist primarily of taxes that the state and local government will collect from the added revenue created in the state. As Citrus College's CTE students will earn more, they will make higher tax payments throughout their working lives. Students' employers will also make higher tax payments as they increase their output and purchases of goods and services. By the end of the FY 2024-25 CTE students' working lives, the state and local government will have collected a present value of \$81.8 million in added taxes.

Benefits to taxpayers will also consist of savings generated by the improved lifestyles of Citrus College's CTE students and the corresponding reduced government services. Education is statistically correlated with a variety of lifestyle changes. The education that Citrus College's CTE students receive will generate savings in three main categories: 1) health care, 2) justice system, and 3) income assistance. Improved health will lower students' demand for national health care services. In addition, costs related to the justice system will decrease. Citrus College's CTE students will be more employable, so their reduced demand for income assistance such as welfare and unemployment benefits will benefit taxpayers. Altogether, the present value of the benefits associated with an education from Citrus College's CTE will generate \$18.3 million in savings to state and local taxpayers.

Total taxpayer benefits amount to \$100.0 million, the present value sum of the added tax revenue and public sector savings. Taxpayer costs are \$76.8 million, equal to the amount of state and local government funding Citrus College's CTE received in FY 2024-25.⁶ These benefits and costs yield a benefit-cost ratio of 1.3. This means that for every dollar of public money invested in Citrus College's CTE in FY 2024-25, taxpayers will receive a cumulative present value of \$1.30 over the course of the students' working lives. The average annual internal rate of return for taxpayers is 2.3%, which compares favorably to other long-term investments in the public sector.

Social perspective



Society as a whole in California benefits from the presence of Citrus College's CTE in two major ways. Primarily, society benefits from an increased economic base in the state. This is attributed to the added income from CTE students' increased lifetime earnings (added student income) and increased business output (added business income), which raise economic prosperity in California.

Benefits to society also consist of the savings generated by the improved lifestyles of Citrus College's CTE students. As discussed in the previous section, education is

For every dollar of public money invested in Citrus College's CTE, taxpayers will receive a cumulative value of **\$1.30** over the course of the students' working lives.



⁶ Due to data limitations, costs were estimated using a proportion based on CTE credits.

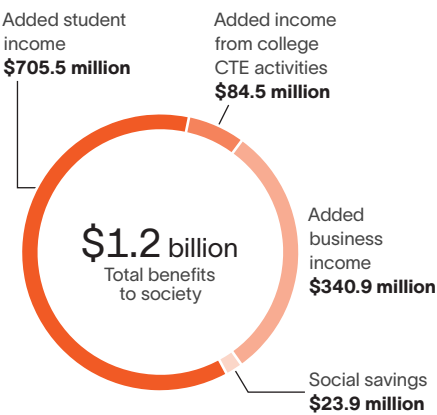


statistically correlated with a variety of lifestyle changes that generate social savings. Note that these costs are avoided by the consumers but are distinct from the costs avoided by the taxpayers outlined above. Health care savings include avoided medical costs associated with smoking, obesity, substance abuse, and depression. Justice system savings include avoided costs to the government and society due to less judicial activity. Income assistance savings include reduced welfare and unemployment claims.

Altogether, the social benefits of Citrus College’s CTE equal a present value of \$1.2 billion. These benefits include \$705.5 million in added student income, \$340.9 million in added business income, \$84.5 million in added income from college CTE activities, as well as \$23.9 million in social savings related to health, the justice system, and income assistance in California. People in California invested a present value total of \$99.2 million in Citrus College’s CTE in FY 2024-25. The cost includes all the college’s CTE expenditures and student costs.

The benefit-cost ratio for society is 11.6, equal to the \$1.2 billion in benefits divided by the \$99.2 million in costs. In other words, for every dollar invested in Citrus College’s CTE, people in California will receive a cumulative value of \$11.60 in benefits. The benefits of this investment will occur for as long as Citrus College’s FY 2024-25 CTE students remain employed in the state workforce.

Social benefits in California from Citrus College’s CTE



Source: Lightcast impact model

Summary of investment analysis results

The results of the analysis demonstrate that Citrus College’s CTE is a strong investment for all three major stakeholder groups—students, taxpayers, and society. As shown, CTE students receive a great return for their investments in an education from Citrus College. At the same time, taxpayers’ investment in Citrus College’s CTE returns more to government budgets than it costs and creates a wide range of social benefits throughout California.

Summary of investment analysis results

 Student perspective	 Taxpayer perspective	 Social perspective
Present value benefits \$183.4 million	Present value benefits \$100.0 million	Present value benefits \$1.2 billion
Present value costs \$22.1 million	Present value costs \$76.8 million	Present value costs \$99.2 million
Net present value \$161.4 million	Net present value \$23.2 million	Net present value \$1.1 billion
Benefit-cost ratio 8.3	Benefit-cost ratio 1.3	Benefit-cost ratio 11.6
Rate of return 21.6%	Rate of return 2.3%	Rate of return n/a*

* The rate of return is not reported for the social perspective because the beneficiaries are not necessarily the same as the original investors.

Conclusion

*The results of this study demonstrate that Citrus College's CTE creates value from **multiple perspectives**.*

The college's CTE benefits businesses in the county by increasing consumer spending in the county and supplying a steady flow of qualified, trained workers to the workforce. Citrus College's CTE enriches the lives of students by raising their lifetime earnings and helping them achieve their individual potential. The college's CTE benefits state and local taxpayers through increased tax receipts and a reduced demand for government-supported social services. Finally, Citrus College's CTE benefits society as a whole in California by creating a more prosperous economy and generating a variety of savings through the improved lifestyles of students.

About the study

Data and assumptions used in the study are based on several sources, including the FY 2024-25 academic and financial reports from Citrus College, industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Lightcast's Multi-Regional Social Accounting Matrix model, and a variety of studies and surveys relating education to social behavior. The study applies a conservative methodology and follows standard practice using only the most recognized indicators of economic impact and investment effectiveness.



Lightcast provides colleges and universities with labor market data that help create better outcomes for students, businesses, and communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Hundreds of institutions use Lightcast to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit lightcast.io/solutions/education to learn more or connect with us.