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Arizona Semiconductor Technician Quick Start Program

Building an Economy for All, Biden Administration, Economy, +3 More



This program provides students at Maricopa Community Colleges with the opportunity to become trained as semiconductor technicians.



President Joe Biden speaks about rebuilding U.S. manufacturing at the Intel semiconductor manufacturing facility in New Albany, Ohio, on September 9, 2022. (Getty/Saul Loeb)

Snapshot

- **Project name:** Semiconductor Technician Quick Start Program
- **Program:** N/A
- **Law:** CHIPS and Science Act

- **Recipient:** Maricopa County Community Colleges
- **Investment amount:** \$270 stipend per student
- **City:** Tempe
- **State:** Arizona
- **Congressional district:** 4
- **Program start date:** 2022
- **Jobs created:** TBD

This profile is part of a project that finds and tracks the public and private sector investments generated or supported by three of the Biden administration's economic laws. These laws make investments in the American people, helping to grow the middle class, lowering the cost of living, and setting up America to better compete and cooperate in the world. Pulling directly from several sources, this catalog provides users with publicly available information such as the number of jobs created, workforce training partnerships, and storytellers benefiting from particular projects, among other detailed information. The profile below expands on the economic, practical, and climate impacts of just one of the 35,000 investments that can be found in the Biden Administration Investment Tracker. It may be updated to account for future project developments.

Intel and Taiwan Semiconductor Manufacturing Company (TSMC) have partnered with community colleges in Arizona to provide training programs for students who wish to enter the semiconductor industry. The Maricopa County Community College District will provide the tuition for the program, and the training will set the students up with the tools to earn a stable living upon completion of the program. This program comes along with the establishment of more semiconductor plants as domestic companies attempt to compete with the decline of domestic production.

Historical context

- **With the passage of the CHIPS and Science Act, community colleges in Arizona have partnered with Intel and TSMC to provide programs for students who wish to enter the semiconductor field:**
 - “All 10 Maricopa Community Colleges train students with specific skills helping them enter the workforce as quickly as possible. This undertaking is particularly important given that Arizona has two of the three largest semiconductor manufacturers in the world: Taiwan Semiconductor Manufacturing Company (TSMC) and Intel Corporation.” – *Arizona Capitol Times*, July 14, 2023
 - “This training supports the renewed effort to grow the workforce needed to support the production of semiconductors and related technologies, preventing a large-scale shortage that could span worldwide. Outlined in the CHIPS and Science Act signed by President Joe Biden in August, the government recognizes this need, and the new legislation provides up to \$52 billion for semiconductor manufacturing, workforce development, and R&D, according to the

Phoenix Business Journal. For the Phoenix area, this directly impacts Intel, currently expanding its chip manufacturing plant in Chandler and adding 3,000 new jobs.” – [Chandler-Gilbert Community College](#), February 2, 2022

- “Intel estimates that the \$20 billion investment in two new chip factories at the company’s Ocotillo campus will create more than 3,000 high-paying jobs and support an estimated 15,000 additional indirect jobs in the community. Intel also aims to increase the number of women in technical roles to 40% and double the numbers of women and underrepresented minorities in senior roles by 2030. Intel’s partnership with MCC on the Industrial Technology for the Semiconductor Industry program is one piece of the company’s efforts to meet these workforce goals.” – [Intel](#), March 7, 2022
- “Currently, both Intel and Taiwan Semiconductor Manufacturing Company (TSMC) are building several brand-new plants, with Intel building two new plants in Chandler, and TSMC building a new plant in far north Phoenix.” – [FOX10](#), October 17, 2022
- **The United States has implemented a plan to combat the decline in its domestic manufacturing industry:**
 - “In recent decades, the U.S. has experienced a steady decline in semiconductor manufacturing as production capacity shifted overseas, with China and other countries in Asia investing heavily in chip manufacturing and research and development (R&D). On its current path, the U.S. share of microchip manufacturing could decline from 11% today to 8% by 2033—down from 40% 30 years ago.” – [Harvard Business Review](#), May 30, 2023
 - “NSER [National Semiconductor Economic Roadmap] (pronounced “answer”) is a 10-year industry-led plan for increasing U.S. competitiveness in semiconductor manufacturing and strengthening supply chain resilience, charting a path for leaders in industry, government, and academia to strengthen the manufacturing ecosystem for a technology the U.S. invented.” – [Harvard Business Review](#), May 30, 2023
 - “Through the CHIPS and Science Act that the Biden administration passed last year with bipartisan support, billions of dollars have been invested into America’s semiconductor supply chain and training programs, spurring dozens of multi-billion-dollar projects that are creating high-paying jobs in states like Arizona. This legislation opened a tremendous opportunity for our community. Since these federal investments in semiconductor production passed, TSMC and Intel have announced a combined total of nearly \$50 billion in new investments here in Arizona, enabling the construction of multiple new, expansive manufacturing hubs.” – [Arizona Capitol Times](#), July 14, 2023

Project summary

- **The program will provide the educational opportunities necessary to develop a new generation of semiconductor workers:** “In an effort to

provide the talent needed to keep production going, Chandler-Gilbert Community College (CGCC) is one of three colleges in the Maricopa County Community College District (MCCCD) to offer a Semiconductor Technician Quick Start program, an in-person, 10-day certification course where participants can learn the skills needed to join this fast-growing industry—in less than two weeks. Estrella Mountain Community College and Mesa Community College are offering the program as well, developed in partnership with major area employers such as Intel Corp. The Semiconductor Technician Quick Start program can be completed at no cost to Arizona residents. Those meeting the eligibility will receive a \$270 tuition stipend, fully covering Maricopa County resident tuition—and partially covering non-resident tuition. According to CGCC, this stipend is awarded upon successfully completing the class and passing the NIMS Technician Certification test. Students who do not pass the certification test will be responsible for paying the \$270 tuition.” – [Chandler-Gilbert Community College](#), February 2, 2022

Outcomes, improvements, and practical impact

- “The accelerated two-week program prepares students for a rewarding career as a semiconductor technician with hands-on learning from industry experienced Intel employees as instructors. ‘The Industrial Technology for the Semiconductor Industry Program accelerates the attainment of industry credentials for our students – opening doors for promising in-demand careers supporting our state and national economy,’ said MCC interim president, Lori Berquam, Ph.D. ‘The program offers our current and future students an incredible opportunity to develop knowledge and skills.’” – [Intel](#), March 7, 2022
- “When Lisa Strothers, 36, was laid off from her mortgage industry job in April of last year, the Arizona-based single mom wasn’t sure what to do next. A few weeks later, she told Insider, she received an email about the ‘Quick Start’ program — a 10-day crash course on how to be a semiconductor processing technician. The program, the product of a new partnership between major semiconductor companies — notably Intel and Taiwan Semiconductor Manufacturing Company — and three community colleges in Arizona’s Maricopa County, was looking for applicants to take part in a test pilot version of the program that June. ... ‘They let you know in that email, ‘You do not have to have experience. We’re going to train you. We’re going to provide you with the basics that you need,’” she said. ‘So that’s what intrigued me and made me move forward, because it was like, ‘Okay, this is a chance to get into the tech field without having any experience.’” ... Strothers said that most of the 15 to 20 students in her class — which consisted entirely of women — didn’t have any tech background.” – [Business Insider](#), August 6, 2023
 - “The test pilot group was sourced by Fresh Start Women’s Foundation, a Phoenix-based nonprofit, in collaboration with MCCC. ... The course concluded at the end of the two weeks with a final exam, which Strothers said had written and hands-on components. She passed the exam and received her program certificate — a semiconductor pre-

apprentice credential. Among students who attempted the full program, 93% of them earned the final certification as of June, according to MCCC. Less than a week later, Strothers began interviewing for new roles — the interviews are typically set up at job fairs on MCCC’s campuses. She ultimately landed a semiconductor processing technician role at Intel’s Ocotillo factory, which she began last August — just four months after she’d been laid off.” – [Business Insider](#), August 6, 2023

Racial equity and justice impact

- “In addition, innovative programs like Semiconductor Technician Quick Start are directing more women and minorities to the industry.” – [Harvard Business Review](#), May 30, 2023
- “In a field that is considered non-traditional for women, the Semiconductor Technician Quick Start program is breaking barriers and providing women with a career trajectory in semiconductor manufacturing. In the Summer of 2022, the Semiconductor Technician Quick Start program graduated its inaugural cohort, which was made up entirely of female students. Thanks to a partnership with the Fresh Start Women’s Foundation, twelve women from traditionally underrepresented communities were able to learn the skills needed for roles as a technician. Since the program’s launch, 82 women have enrolled in the program from June to October 2022.” – [Maricopa Community Colleges](#), November 1, 2022
- Maricopa County Community College District Chancellor Steven Gonzales: “In this effort, one of the biggest priorities for MCCCDC and local manufacturers has been providing accessible, affordable training opportunities and expanding these opportunities to a diverse workforce. In fact, in the 2022-2023 year, 53% of our semiconductor training program students were first-generation college students, and a majority identified as students of color. Two cohorts that have come through have been all women. We’re proud to say that we are building a workforce that increasingly represents the diversity of our state.” – [Arizona Capitol Times](#), July 14, 2023

Economic impact

- “A key focus of this program is to present new career possibilities to women, veterans and underrepresented minorities in the manufacturing industry.” – [Intel](#), March 7, 2022
- “In the program’s first year, 587 students earned certifications, with over two-thirds representing students of color and over half representing first generation college students.” – [Arizona Commerce Authority](#), August 9, 2023

Official supporting statements

- Maricopa Community Colleges Interim Provost Dr. Eric Leshinskie: “Our partnership with Intel is working towards a secure future for our students

as they enter the workforce and further Arizona’s place as a global leader with the brightest talent in the semiconductor industry.” – [Intel](#), March 7, 2022

- U.S. Sen. Mark Kelly (D-AZ): “Now, last year, while I was working on the CHIPS law, I met with two women over a Zoom call; one of them, she told me her story, which I thought was pretty incredible. I mean, this woman was out of work for over a year; she had three kids; she was a single mom. She could not find a job, and she’s looking through her email, her spam folder – who goes in their spam folder? I don’t ever go in there. She goes in her spam folder and she sees this ad for this thing called the Quick Start program at Estrella Mountain Community College. It is a 10-day program to give her a background in semiconductor manufacturing, and it promised that at the end of the 10 days, if you complete this, you would get an interview with a semiconductor manufacturing company. So she figured what the heck, and she called, and she got somebody on the phone and she got into the program; she completed it. She got an interview with Intel and now she works at Intel as a semiconductor manufacturing technician. I mean, it is a story that we will see repeated over and over again because of the CHIPS laws.” – [Center for Strategic and International Studies](#), May 3, 2023
- Maricopa County Community College District Chancellor Steven Gonzales: “On a personal level, I’ve seen firsthand how these investments – and our training programs – are changing lives. I learned the story of a single mom who didn’t see much hope. After completing our training program, she got a good-paying job with one of the manufacturers here in Phoenix. She told me, ‘For the first time in a long time, my kids are going to have a very different Christmas this year.’ That’s what these new career opportunities mean for so many people in Maricopa County. We get folks trained and ready to work quickly – not just for semiconductor work but in countless other fields. That has a very positive effect on the community and a very positive impact on the economic well-being of our people. We are working to help our students expand their career options, and federal investments are helping us do that.” – [Arizona Capitol Times](#), July 14, 2023

Selected clips

- “Women in tech: Semiconductor tech boot camp from Intel and Maricopa Community Colleges graduates all-female class” – [Phoenix Business Journal](#), July 25, 2022
- “US microchip production is about to surge, and Arizona will be at the forefront” – [The Arizona Republic](#), July 27, 2022

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