

Wish and Chips

In these South Korean schools dedicated to teaching semiconductor fabrication, seats are in high demand. Why? **Max Kim** explains

Never ever fumble the silicon wafers. On a recent morning at Eumseong's Chungbuk Semiconductor High School in South Korea, Kang Soo Jin, 43, a teacher, was drilling this cardinal rule of semiconductor manufacturing into three students at her lab.

The shiny, dinner-plate-size discs are the building blocks of computer chips. Because they are fragile and can be damaged by even the tiniest of contaminants, the students have been practising transferring them safely from one carrier tray to another using an instrument called a "wafer changer".

"Let's say you dropped one," Kang said, as a student gingerly pulled a lever, prompting the machine to slide a batch of wafers into open slots. "Guess how much that would be."

The question was rhetorical. A blank wafer costs around \$180 (more than £17,000). By the time it has been etched with electronic circuits, it can be worth thousands.

In 2025, South Korea exported a record \$173 billion worth of semiconductors. This year, it is on pace to double that. The frenzy is being driven by the country's dominance in memory chips, a type of semiconductor critical for feeding data to advanced AI systems. South Korea produces over 60 per cent of the world's supply. Over the past year, demand has outpaced production capacity, sending prices soaring as much as 10-fold and fuelling a widespread belief that semiconductors are the career path of the future.



FUTURE READY: Students change into smocks before class at Chungbuk Semiconductor High School. The silicon wafers they handle can be damaged by the tiniest of contaminants

This is the moment that Chungbuk Semiconductor High School has been waiting for. It was founded in 2010 as a "meister" high school, modelled on Germany's skilled-trades system. The campus, about two hours south of Seoul, is the oldest of four such vocational schools in South Korea dedicated exclusively to semiconductor manufacturing.

Admission inquiries have tripled over the past year, said principal Seo Oun-Seok. The campus, which houses dormitories for its 300 students and six mock fabrication facilities, has also attracted a steady stream of visitors eager to study its model.

They've included other school administrators and even a state broadcaster from China, where the government has started its own push to build a domestic chip industry.

"It feels like we're the hottest school in South Korea right now," Seo said.

And why shouldn't it be? He pointed to a poster on a wall of his office displaying the school's postgraduate employment rate: 96.4 per cent.

For many parents who call Seo, the focus is on job prospects at Samsung and SK Hynix, the country's biggest beneficiaries of the semiconductor boom.

Landing a job at either company is spoken of almost like winning the lottery be-

cause both firms have union agreements that tie bonuses to operating profits. Under the latest agreement with Samsung's union, employees in its semiconductor unit, including assembly-line operators, could receive up to \$4,000,000 next year if certain profit targets are met.

Students are increasingly flocking to university engineering programmes affiliated with Samsung or SK Hynix rather than medical school, which has long been considered the pinnacle of academic achievement in South Korea. Pathways into the companies' fabrication lines have become no less competitive.

At Chungbuk, Kang said only students ranked in the top

third of their class would be considered by Samsung, while SK Hynix considered only the top quarter.

Beyond grasping the intricacies of chip manufacturing, including chemicals and machinery, top students are expected to demonstrate proficiency in a foreign language, earn at least three technical certifications and complete 25 book reports.

Each year, about 20 high-achieving freshmen are recruited directly by Samsung or SK Hynix through scholarship programmes that include internships and lead to full-time employment. Everyone else enters an intensely competitive nationwide recruitment process involving exams and interviews.

"Students study for those tests from 9 in the morning to 9 at night, for a month straight," Kang said.

As part of a nationwide effort to secure South Korea's future chipmaking workforce, the government plans to open another semiconductor meister high school in Seoul next year. Another school is also under consideration.

Samsung and SK Hynix are building or planning new semiconductor plants in Yongin, a city south of Seoul, where the government has pledged hundreds of billions of dollars to create what it hopes will become the world's largest chip manufacturing hub.

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