Singapore: NTU Transforms Education with AI Integration

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Nanyang Technological University (NTU) Singapore is embarking on an ambitious transformation of its undergraduate education, embedding artificial intelligence (AI) across its curriculum to prepare students for a rapidly evolving digital world.

By 2030, NTU aims to integrate AI into 40% of courses across all 52 undergraduate programmes, a significant increase from the current 5%. Half of these courses will leverage AI to personalise learning, helping students master challenging material.

The other half will teach students to build, deploy and manage AI agents to solve real-world problems, producing graduates who can continuously learn with AI tutors and create solutions to enhance productivity.

From August 2026, all undergraduates will gain full access to a suite of premium Google AI tools, including Gemini Enterprise, Google AI Studio and Vertex AI, along with computing credits to develop their own AI agents.

These agents are portable, allowing graduates to continue improving and using them in the workforce, giving them a competitive edge. NTU is the first university in Singapore to implement AI at such scale within education.

These initiatives are part of NTU2030, the University's five-year plan to deliver transformative education and expand its global impact, according to NTU President Professor Ho Teck Hua.

“As one of the world’s top-ranked universities for AI research, NTU is well-placed to pioneer a new model of education with AI. We hope our students will learn to break down complex problems into tasks and orchestrate AI agents to tackle each. For example, a business student might deploy AI agents to run experiments on pricing strategies for an e-commerce product,” he said.

Professor Ho, also Founding Executive Chairman of AI Singapore, added: “By embedding AI across the curriculum, our graduates will leave NTU with not only deep AI knowledge but also a portfolio of AI agents ready to deploy from day one in the workforce. This collection of AI agents will be a key differentiator for our graduates.”

Currently, only 5% of undergraduate courses, mostly in computing and AI programmes, incorporate AI. NTU plans to raise this to 40% by 2030. In half of these courses, AI tools will personalise learning, helping students tackle challenging material through platforms such as the NTU AI Learning Assistant (NALA). NALA enables educators to create AI tutors trained on course materials, offering students around-the-clock support tailored to their learning styles.

In the other half of the courses, students will engage in problem-based learning, developing AI agents to solve practical challenges from industry, government and society. For instance, an engineering student might deploy AI agents to generate car designs and simulate energy usage.

All undergraduates, regardless of discipline, will have access to Google’s premium AI tools, supporting students from beginners to advanced users in exploring innovative ways to learn and work.

NTU Deputy President and Provost Professor Christian Wolfrum said: “Making AI central to all programmes moves us to a model where AI is integral to the student’s learning journey. AI tutors and agents enhance productivity in solving real-world problems, leveraging NTU’s strength in interdisciplinary research. This approach ensures our graduates thrive in the AI economy.”

Responsible AI use is also a core component of the initiative. Students will learn to evaluate the accuracy and ethics of AI outputs and take accountability for their use. These principles are embedded in the mandatory course “Science and Technology for Humanity,” fostering a mindset that considers AI’s impact on society.

Through these efforts, NTU Singapore is positioning its students to not only master AI but also to lead and innovate responsibly in an AI-driven future, preparing them to make meaningful contributions across industries and society.