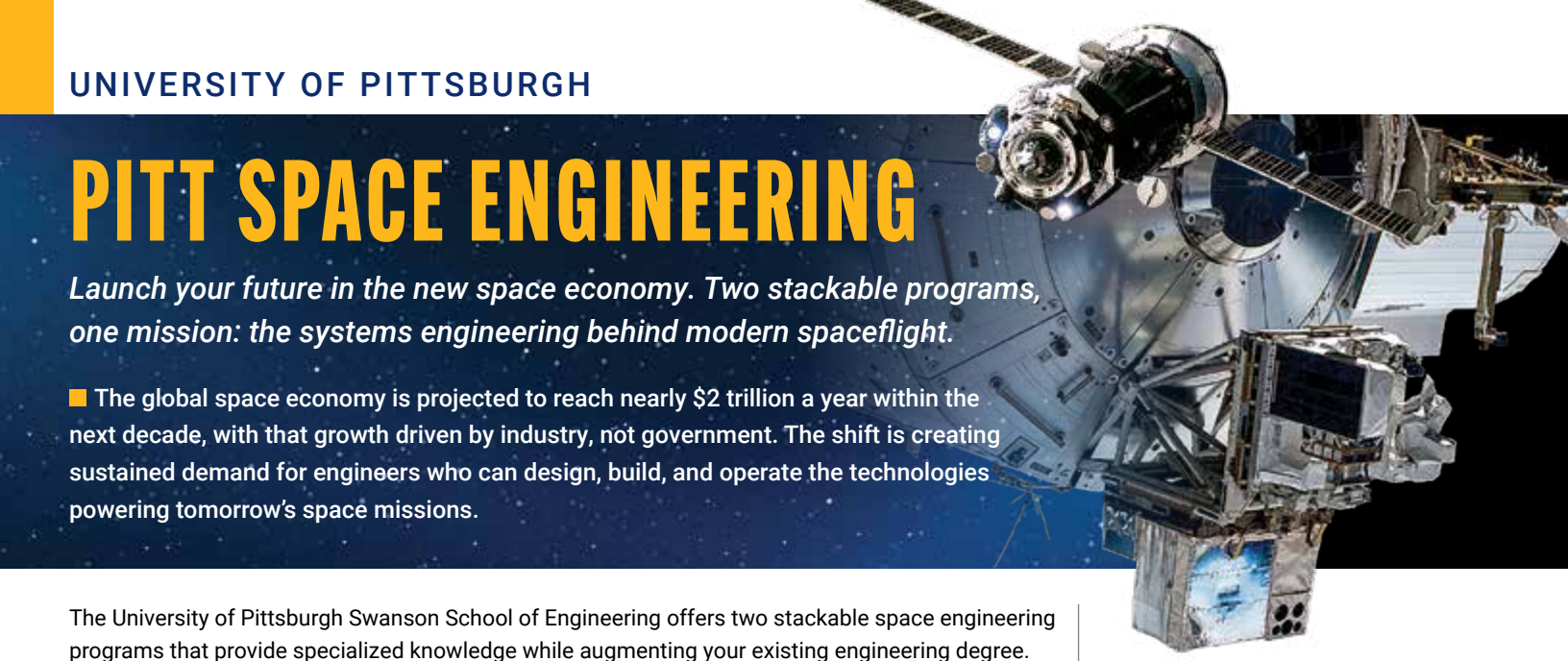
UNIVERSITY OF PITTSBURGH

PITT SPACE ENGINEERING

Launch your future in the new space economy. Two stackable programs, one mission: the systems engineering behind modern spaceflight.



The global space economy is projected to reach nearly $2 trillion a year within the next decade, with that growth driven by industry, not government. The shift is creating sustained demand for engineers who can design, build, and operate the technologies powering tomorrow's space missions.

The University of Pittsburgh Swanson School of Engineering offers two stackable space engineering programs that provide specialized knowledge while augmenting your existing engineering degree. Both are designed and taught by the Department of Electrical and Computer Engineering.

A different approach. *Pitt focuses on space engineering, not aerospace*. Our programs emphasize technologies that power modern space systems, including advanced electronics, onboard computing, communications, sensors, and autonomous software (including agentic AI). Because each program builds upon an established engineering degree (BS, MS, or PhD), you graduate with both technical depth and multidisciplinary space-systems expertise today's employers demand, a combination that a conventional aerospace degree does not provide.

Choose Your Path

- **Minor in Space Engineering** (undergraduate, 16 credits) – Designed for Pitt engineering and STEM undergraduates to add space expertise to a core degree. One fundamentals course, two core courses, and two more drawn from the core or a broad set of space-related electives across engineering, astronomy, and geology.
- **Graduate Certificate in Space Engineering** (10 credits) – Designed for graduate students and working professionals who hold a bachelor's in engineering or a related STEM field, with a solid foundation in mathematics and physics. Includes one fundamentals course plus two core courses spanning astrodynamics, computing, electronics, and a hands-on space systems project.

Learn Through Real Space Missions

Both programs are powered by Pitt's NSF Center for Space, High-performance & Resilient Computing (SHREC), one of the nation's leading academic research centers in space engineering, with more than 30 university, industry, agency, and institute partners. SHREC has led and supported dozens of missions from LEO (Low Earth Orbit) and GEO (Geosynchronous Orbit) as well as to the Moon, giving you the unique opportunity to work on flight systems with organizations defining the field.

Core Courses (*shared across both programs*)

- Introduction to Space Engineering – 4 credits (*required*)
- Dependable Systems – 3 credits
- Extreme Environment Electronics – 3 credits
- Space Orbital Mechanics – 3 credits
- Space Systems Project – 3 credits

Graduate sections are ECE/ENGR 2000-level; undergraduate sections are 1000-level.

Contact

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University of Pittsburgh®

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Learn more >>> **space.pitt.edu** >>> **nsf-shrec.org**