



Growing Departments Require New Building to Meet High-Tech Needs of Tomorrow's Engineers



With the rapid demand and growth in the Engineering departments in Stony Brook University's College of Engineering and Applied Sciences (CEAS), there is now a pressing need for new laboratory space for instruction and research on campus. Since 2011, CEAS's undergraduate enrollment has increased by 1,600 students (71%), which has strained the University's ability to provide class and laboratory space for existing engineering courses as well as impacted its ability to offer needed new classes.

CEAS's three founding engineering departments — Electrical Engineering, Mechanical Engineering and Materials Sciences — are still housed in the same three buildings constructed in the 1960s. Critical equipment is decades out of date.

While CEAS's admissions standards have risen to be the highest among public universities in the Northeast, many well-qualified engineering students are turned away and faculty in some specialties cannot be hired due to lack of research space to offer candidates.

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THE FUTURE

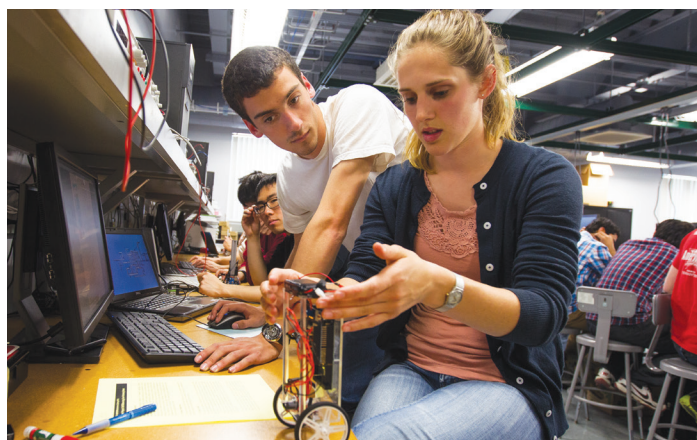
Stony Brook University has the ability to attract an additional 500 of the brightest engineering students to Long Island through the addition of a 100,000-gsf building primarily for laboratory and instructional use. The new building would include:

- innovative classrooms
- student project manufacturing shops
- entrepreneurship for student startups
- interdisciplinary initiatives to attack today's multifaceted problems

(Space in existing buildings will be better utilized for faculty since minimal office space will be made available in the new engineering building.)

DEPARTMENTS AND SPECIALTY AREAS NEEDED TO EDUCATE THE NEXT GENERATION

- **BIOMEDICAL ENGINEERING** "wet-labs" to expand offerings and research in Biomaterials, Bionanotechnology and Tissue Engineering.
- **CIVIL ENGINEERING** Structural Testing Bay to simulate hurricanes and earthquakes in the design of safer structures, and a Wave Basin to model the effect of ocean processes on coastal structures. (Civil Engineering has grown from 20 to 150 students in four years.)
- **CHEMICAL AND MOLECULAR ENGINEERING** "wet labs" for instruction and research involving a range of chemical and biological agents.
- **ELECTRICAL AND COMPUTER ENGINEERING** labs for Surface Mount Technology, Cyber-enabled Embedded System Design and Terahertz Electronics.



- **MATERIALS SCIENCE AND CHEMICAL ENGINEERING** Materials Institute, for campus-wide use, housing Raman Spectroscopy, X-ray Photoelectron Spectroscopy, X-ray Diffraction and Atomic Force Microscopy equipment.
- **MECHANICAL ENGINEERING** labs for a Design Innovation Studio, Mechatronics and Soft Robotics. (Mechanical Engineering has grown 85% since 2010 and seen a fivefold growth in research awards.)

ABOUT THE COLLEGE OF ENGINEERING AND APPLIED SCIENCES

CEAS is committed to attracting a diverse and highly qualified student body and producing the exceptional leaders of tomorrow for the State of New York and the nation. The more than 160 faculty members include 30 NSF CAREER and Presidential Young Investigator awardees, National Medal of Science and National Medal of Technology recipients, members of the National Academy of Engineering and 12 SUNY Distinguished Professors.

CEAS is uniquely structured through the integration of traditional engineering departments – such as Biomedical Engineering, Civil Engineering, Electrical & Computer Engineering, Materials Science and Mechanical Engineering – with the Departments of Applied Mathematics and Statistics, Biomedical Informatics, Computer Science and Technology & Society. Overall, the College has more than 20 research-focused centers and institutes, and close to 5,000 students call CEAS their home away from home.



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