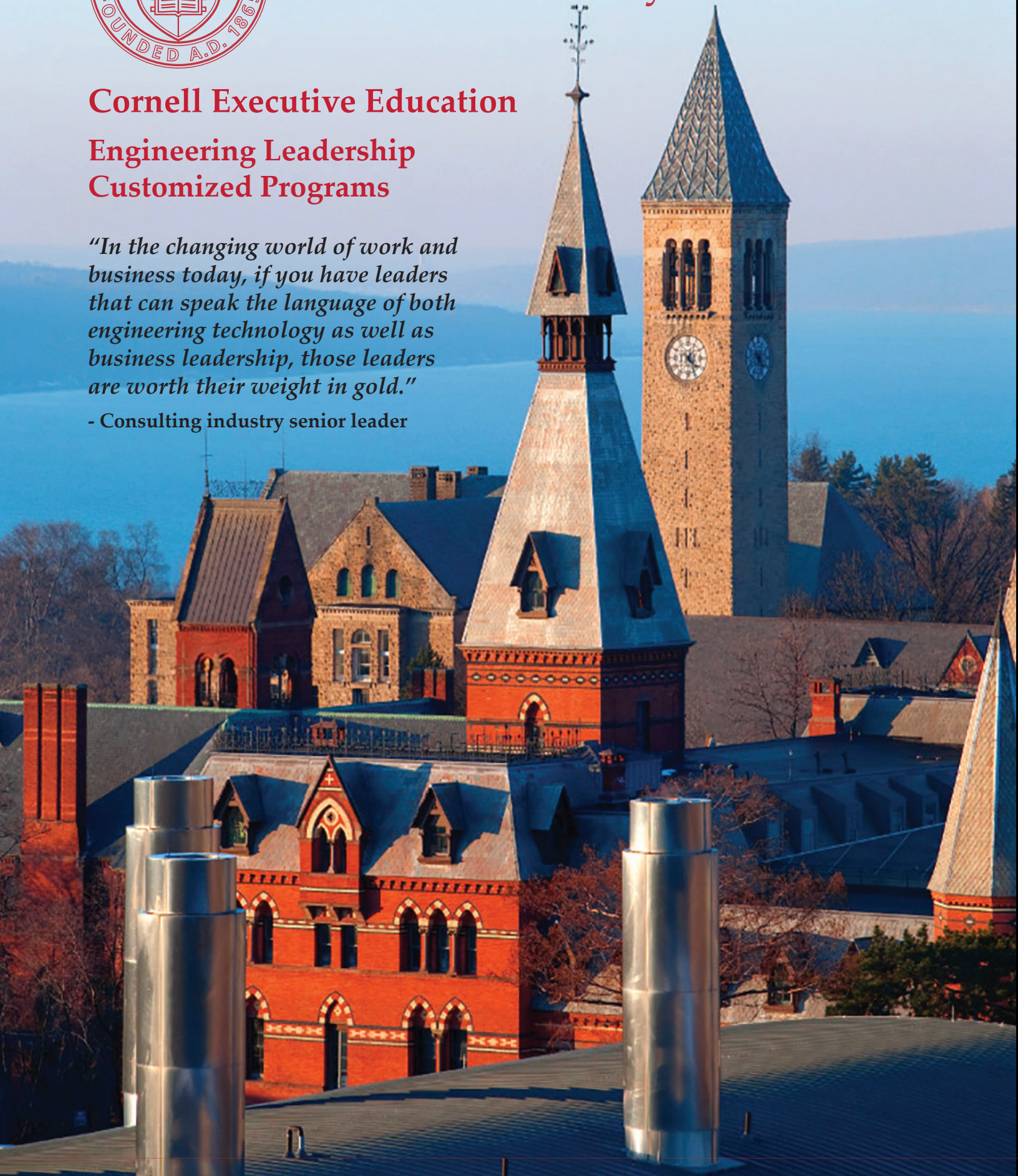


Cornell University

Cornell Executive Education Engineering Leadership Customized Programs

"In the changing world of work and business today, if you have leaders that can speak the language of both engineering technology as well as business leadership, those leaders are worth their weight in gold."

- Consulting industry senior leader



WHY WE NEED ENGINEERS TO LEAD

Products and processes of engineering pervade our lives. From atomic-level advances in biomedical and chemical engineering, infrastructure innovations for a growing population, to new possibilities in space exploration, the engineering profession has led us to new heights of global technological advancement.

In this new era of technological integration, governments and businesses must leverage the expertise of engineers. **Lines between technical and business capabilities have blurred**, and more than ever before, **there is a need for these traditionally separate domains to merge**. Engineers are no longer specialists consulted for specifically defined tasks and problems; rather, they are essential contributors at every level and function of business and society. Increasingly, they also are leaders.

Organizations seeking to integrate technical and leadership talent face predictable challenges. Most significantly, the traditional rigorous engineering curriculum leaves little room for the management and professional skills that organizations seek in their leaders. **The gap between the roles of the individual technical contributor and the leader of people and teams is large**; engineers frequently struggle to make the transition.

To support organizations challenged by this capabilities gap, Cornell University offers custom, non-degree Engineering Leadership Executive Education programs that build on its resources in business, engineering, and technology.

Engineers:

- Drive technological innovation
- Are uniquely positioned to evaluate the cost, benefits, and potential implications of new technology and to make strategic decisions based on this knowledge
- Are needed to design and manage the complex systems associated with our era of big data, growing physical infrastructure, increasing global population, and environmental dependencies

Marketplace Trends Driving Engineering Leadership Demand

- The pace of technology innovation continues to accelerate
- The world is increasingly connected and managed through technology
- The population affected by technology is increasingly diverse and multidisciplinary
- The success of technology innovation is dependent on a mix of social, cultural, political, and economic forces
- The presence of technology in our everyday lives is and will continue to be seamless, transparent, and pervasive
- The structure of innovative organizations continues to flatten
- The expertise divide between engineers and non-engineers will continue to widen as more training is required to understand complex technology

The Engineering Challenge

- Engineering training comes before the possibility of leadership experience, and the time and financial cost to transition engineers from individual contributors to team leaders can be high.
- Innovation requires the ability to work across disciplines, comfort with ambiguity and failure, aptitude for influencing, and other skills that engineers often lack.

Organizational Benefits to Engineering Leadership

From an initial consideration of the challenges faced, the following areas of focus could be targeted for measurable improvement:

- Business: Increasing financial knowledge, marketing and segmentation, strategic thinking, and service operations. Manage dilemmas effectively.
- Innovation: Drive growth by looking at functional units and the overall enterprise in new ways. Institute organizational structures to promote creativity and “intrepreneurship.”
- Culture: Create an enhanced leadership culture within engineering functions and connected business units through increased capabilities in leading teams and self-awareness.
- Career trajectory: Understand the potential leadership enablers and “derailers” for individual career growth of engineering leaders in the organization.
- Succession and teamwork: Develop practical human-capital management skills in developing others, giving and receiving feedback, coaching others, and leading high-performing teams.

The Cornell Engineering Leadership Credo

The Cornell College of Engineering takes a holistic approach to educating future leaders. The innovative Engineering Leadership Program is based on these four pillars:

KNOWLEDGE

In addition to technical expertise, engineering leaders should be responsive to empirical knowledge from psychology, organizational behavior, and related fields. Our programs are rigorous and empirically based, making use of the most current social science research.

INSIGHT

Leaders know themselves. To us, insight means the ability to learn by reflecting on one’s own core values, ethics, motivations, strengths, and susceptibilities. Only by knowing this and being able to intuit it about others can a leader fully leverage the strengths and inherent motivations of the team. Insight extends beyond the individual as well: Leaders must have the insight to recognize system dynamics to respond accordingly.

EXPERIENCE

Effective leaders have the ability to work with others to translate values, ideas, and vision into action. This happens not as an academic exercise, but through experience and reflective learning. All of our Engineering Leadership programs are highly interactive, inviting participants outside their comfort zones to practice new skills. This is the “doing” that comes with “knowing.”

COURAGE

Leaders must be prepared to demonstrate moral, psychological, and sometimes even physical courage. To teach this attribute, we illuminate the situational factors that enable it. We prepare leaders to take personal risks to promote core values, challenge entrenched wisdom, and act in the face of popular opposition in service of a larger goal.

Why Choose Cornell?

- **We understand engineers.** We teach engineers across their careers via engineering leadership and business leadership programs at the undergraduate, graduate, and professional levels. Our programs recognize and leverage engineers' preferences to solve problems systematically, work within defined boundaries and constraints, reduce or eliminate ambiguity, and maintain practicality.
- **We straddle boundaries.** Cornell Executive Education draws upon the expertise of top global business and engineering schools, with faculty who have deep experience collaborating across disciplines of management, technology, and engineering. Cornell programs seamlessly integrate capabilities to prepare multidisciplinary leaders who can work across functions.
- Our faculty speak the language of both business and engineering.



Professor Erica Dawson

Director of Leadership Programs at Cornell College of Engineering, is trained in organizational behavior with a PhD in Social Psychology from Cornell.



Professor Allan Filipowicz

Associate Dean of Executive Education at the Johnson business school, is a trained engineer with a BS and MEng from Cornell.

- **We deliver excellence.** No other executive education program combines the strengths and resources of an Ivy League, top-10 College of Engineering with a globally recognized integrated College of Business.

Customizing Your Cornell Engineering Leadership Executive Education Program

Organization/Individual Business Issue	Leadership Topic/Potential Content
Individual contributor evolving to team leader	Leading others, self-awareness, communication skills
Engineers needing business acumen and leadership capabilities as they move up in the organization	Content specifically designed for engineers in business acumen (finance, marketing, strategy) and leadership (leading others, businesses, teams, and self)
Businesses needing collaboration across the business with functionally diverse colleagues	Collaboration skills and practice in dealing with increased uncertainty and ambiguity
Engineers focusing on innovation in terms of "building new things" rather than customer needs	Innovation focused on customer discovery and insights, design thinking and innovation leadership
Skilled engineers transitioning to new roles and new geographies	Decision making, critical thinking, motivation and persuasion, self-awareness, giving and receiving feedback

Examples of Cornell Executive Engineering Leadership Education

Example 1: Global Petrochemical Industry Engineering Leadership

Situation	Solution	Results
The company wanted to develop its next generation of senior leaders and deepen its succession planning for key roles in the future. These leaders tended to come from an engineering or technical background in various roles in the business.	Cornell designed a three-module approach comprising three face-to-face sessions over nine months to grow the leadership capabilities of the participants. The program also incorporated integrated individual and team projects to drive additional organizational value.	Since the program was delivered in fall 2015, several of the participants have been promoted to more senior leadership roles, and we are discussing a second cohort to continue this progress.

Example 2: Indian IT/Technology Company Engineering Leadership

Situation	Solution	Results
The company wanted to invest in developing the broader business and leadership capabilities of its key talent. This program was in context with the organizational strategy to continue to be a trusted advisor and innovative business partner to its clients	Cornell designed a program comprising two face-to-face modules over six months, with strategic business projects on key priorities during the intersession. These projects will benefit from Cornell faculty, students, and research to help advance these key technical challenges	The program has helped to develop these technical leaders in key leadership capabilities such as strategic thinking, communication, influence, and self-awareness that will be required to enhance their career development and company growth in the future

Example 3: Engineering Talent and Innovation Programs in Financial Services

Situation	Solution	Results
This technology company in the financial services industry wanted to grow the innovation capability of its people and also deepen its connections to key engineering and business talent in recruiting.	Cornell paired next-generation-talent individuals (MBA, PhD, engineers) with organizational participants for a two-day hackathon on key innovation platforms for the company. The multidisciplinary teams used customer insight to develop ideas and implementation, then pitched these to senior organization executives,	The company benefits were three-fold: <ul style="list-style-type: none">• Innovative ideas and projects to implement on the company platforms• Contacts and buy-in with key talent from the Cornell student network, which led to several job offers from the company• New skills for the executive participants in design thinking, innovation, and leadership.

About Cornell Executive Education

- As a leader in innovative business education for the connected world, Cornell Executive Education combines more than 60 years of customized executive education with innovative solutions.
- We leverage industry leadership from the largest Ivy League institution in the areas of innovation, business acumen, and strategic leadership.
- We elevate your experience by offering an agile approach to client project design.
- Cornell connections offer a multidisciplinary approach, and our global educator network provides extra value for optimal return on investment.
- At Cornell Executive Education, our experience and networks will transform your business.

Contact Us to Get Started Planning Your Engineering Leadership Program

We will work with you to:

- Identify your audience needs
- Scope a program framework by size, setting, budget, and timing
- Integrate our offerings into your talent development programs

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