PROFESSIONAL EDUCATION
Short Programs

INNOVATION

SUMMER COURSES

The power of innovation at MIT is undeniable.
Just look at its alumni:

- 25% have founded companies with innovations that started at the school
- 31% hold one or more patents
- 4.6 million jobs created around the globe created in total generating nearly $2 trillion in annual revenue

Come see what the buzz is all about. MIT Professional Education offers several Short Programs that can help professionals recognize, nurture, and leverage cultures of innovation within their organizations.

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Summer Courses

Additive Manufacturing: From 3D Printing to the Factory Floor
There's a lot of hype surrounding 3D printing, but how best can organizations capitalize on its potential in a manner that is both efficient and cost effective? Survey the landscape of additive manufacturing from the fundamentals to practical applications and technology trends, with a focus on high-performance materials including polymers, metals, composites, and biomaterials.

Advances in Imaging
Think like an MIT Media Lab Inventor. Taught by Dr. Ramesh Raskar, Head of the MIT Media Lab's Camera Culture group, this course introduces you to a variety of cutting-edge techniques for computational imaging and visual mining including key topics in high-dynamic range, AR/VR, time of flight, signal processing, Flourier optics, and more. You'll also receive hands-on demonstrations of a wide range of imaging hardware and visual analysis software, tour the Media Lab and learn about its latest research, and explore emerging solutions in optics, sensors, and computer vision to overcome traditional constraints and open new research and commercial opportunities.

Beyond Smart Cities
The world is experiencing a period of extreme urbanization with cities in the 21st century accounting for nearly 90% of global population growth, 80% of wealth creation, and 60% of total energy consumption. This course will focus on understanding the complexities of cities through the use of Big Data Urban Analytics and the design of New Urban Systems for high-density cities such as systems for mobility, energy, food, and living/working.

Innovation: Beyond the Buzzword
Understand the real workings behind genuine innovation and develop the skills that are crucial to the innovator's methods in order to create stronger and more successful business models and product designs.

Innovation And Technology In Agriculture And The Environment
The success or failure of a product can hinge on whether or not it gets into customer hands first while product design processes, philosophies, and principles are constantly evolving. Discover the latest FUNdaMENTALS of precision product design, explore focused machine element topics, and tackle your own design challenges in order to reduce your time to market and maximize market share.

Mastering Innovation & Design-Thinking

Learn how to think like a designer when you approach your next engineering task through the application of this 10-step design process and 3-step vision creation process to empower your team to create more powerful solutions.

Multiscale Materials Design
As the demand for high-performance materials with superior properties, flexibility, and resilience grows, a new design paradigm from the molecular scale upwards has revolutionized our ability to create novel, bio-inspired materials for applications in polymers, metals, ceramics, and even sustainable infrastructure materials such as concrete and asphalt. This course focuses on the science, technology, and state of the art of multiscalable materials through lectures and hands-on labs.

Organizations, Innovation, and Technology: Putting Ideas to Work
The idea is just the first step on the long path to successful innovation. Real change requires organizational changes as well, such as providing resources for technical development and gaining the buy-in of others through negotiation, bargaining, and coalition building. You may already have the vision, now learn the strategies to overcome the bottlenecks in your organization.

Product Platform Design and Product Family Design
Industry has evolved from the days of craft manufacturing to mass customization. How do you build a robust product platform that can support multiple products from the same product family in the most cost-effective and timeliest manner possible? This course will give you the knowledge and strategies to be agile with your product design and gain the leading edge on your competitors.

Radical Innovation
Fueled by modern technology, new ideas are emerging at an extraordinary pace. Examine the critical philosophies, tools, procedures, and incentives for driving innovation, guarding against competitive threats, and generating new products and services within your organization.

Rapid Prototyping Technology
Rapid prototyping technologies such as additive manufacturing (3D printing), laser cutting, waterjet cutting, silicone molding, thermoforming, and more can eliminate many inefficiencies in the manufacturing process. Obtain a full understanding of and get hands-on exposure to the processes commonly used to rapidly fabricate prototypes including limitations, dominant designs, cost, and the practicalities beyond the technology.

The Invention Process: Invention in the Context of Innovation

Taught by the renowned Emmanuel Sachs, one of the inventors of 3D printing, this course will help you master the ability to critically recognize and analyze opportunities for innovation and develop strategies to foster an environment for effective and meaningful innovation within your organization.

Understanding and Predicting Technological Innovation: New Data and Theory

Recognizing the need for invention and nurturing innovation within your organization is easy to miss and difficult