



COLUMBIA  
ENGINEERING

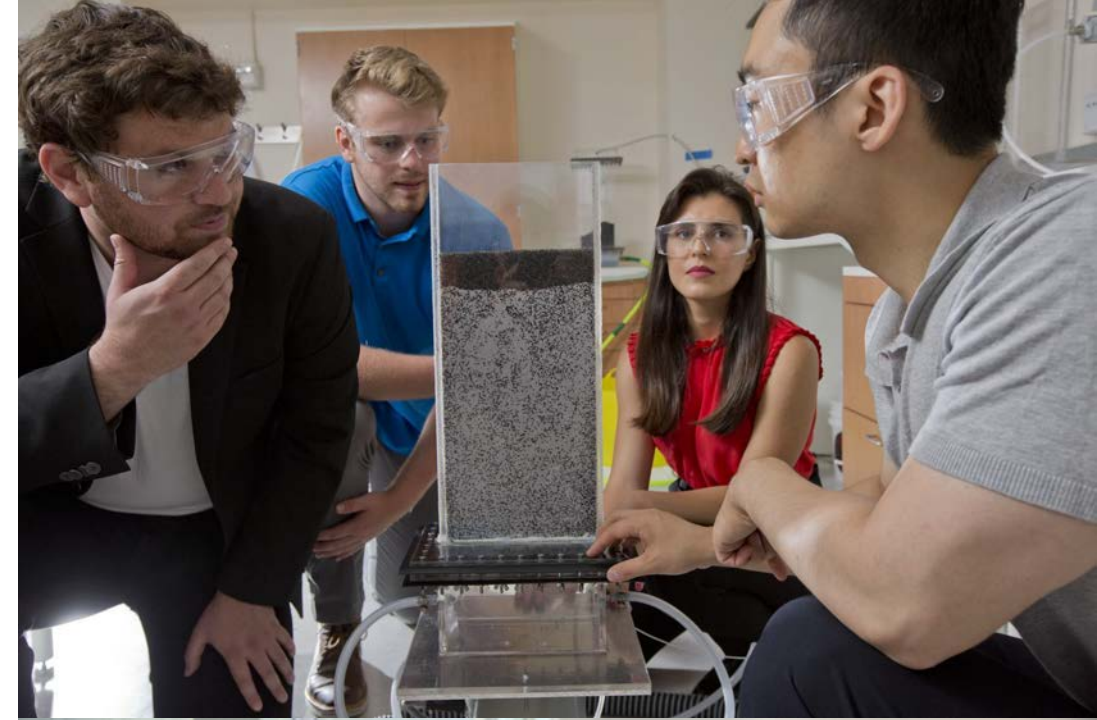
# MBA<sup>x</sup>MS

Dual MBA/Executive MS in  
Engineering and Applied Science



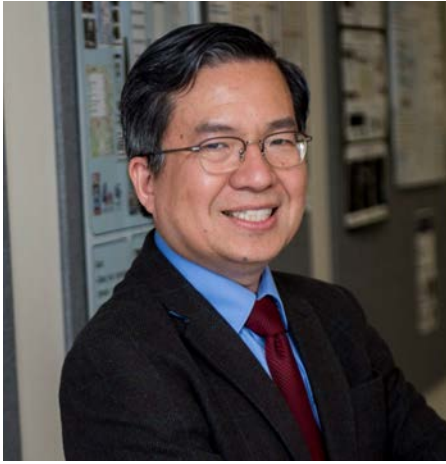
# An **MBA<sup>x</sup>MS** in Engineering and Applied Science:

- Growing need for business leaders with technical skills
- 2 degrees from 2 top-ranked schools in < 2 years
- Amazing faculty + unique curriculum design
- Dynamic and diverse community of students
- Incredible resources for academic and career support
- Unmatched location in New York City



# World-class knowledge





## **Shih-Fu Chang**

Dean

Fu Foundation School of Engineering and  
Applied Science

Morris A. and Alma Schapiro Professor

Professor of Electrical Engineering and  
Computer Science

**“ We recognize how important it is to provide students with broad exposures to emerging technology breakthroughs.”**



## **Costis Maglaras**

Dean

Columbia Business School

David and Lyn Silfen Professor of Business

**“ This program allows students to move seamlessly from the classroom, to product development, to large-scale innovation.”**

# Program Directors



**Garud Iyengar**  
Program Director

Tang Family Professor of Industrial  
Engineering and Operations Research  
Senior Vice Dean of Research and  
Academic Programs

Fu Foundation School of Engineering and  
Applied Science



**Ciamac Moallemi**  
Program Director

William Von Mueffling Professor of Business

Columbia Business School



**Harry West**

Prof. of Professional Practice  
in Industrial Engineering and  
Operations Research

**Teaches** “Human-Centered  
Design and Innovation”



**Lydia Chilton**

Assistant Professor of  
Computer Science

**Teaches** “Design of UI/UX for  
connected systems”



**Sam Sia**

Professor of Biomedical  
Engineering

**Teaches** “Frontiers of  
Tough Tech”



**Dan Wang**

Associate Prof. of Business

**Teaches** “Technology  
Strategy”



**Sheena S. Iyengar**

S.T. Lee Prof. of Business

**Teaches** “Think Bigger”



**Jorge A. Guzman**

Associate Prof. of Business

**Teaches** “Entrepreneurial  
Strategy”

## Program

# Faculty

# 75+

Faculty Members

# 14

Areas of Study



## Fall Semester

Human-Centered Design & Innovation •  
Design of UI/UX for Connected Systems •  
Frontiers of Tough Tech •  
Fundamental Design Tools •  
Foundations of Entrepreneurship \*  
Statistics + Business Analytics \*

## Spring Semester

Lead: People, Teams, Organizations \*  
Strategy Formulation \*  
Managerial Economics \*  
Global Economic Environment \*  
Marketing \*  
Financial Accounting \*  
Foundations of Valuation \*  
Corporate Finance \*  
Operations Management \*  
Analytics in Python •

\*CBS •SEAS



# First Year Curriculum



## Entrepreneurship Concentration

Work on your startup with funding  
provided by the program

# Summer Term

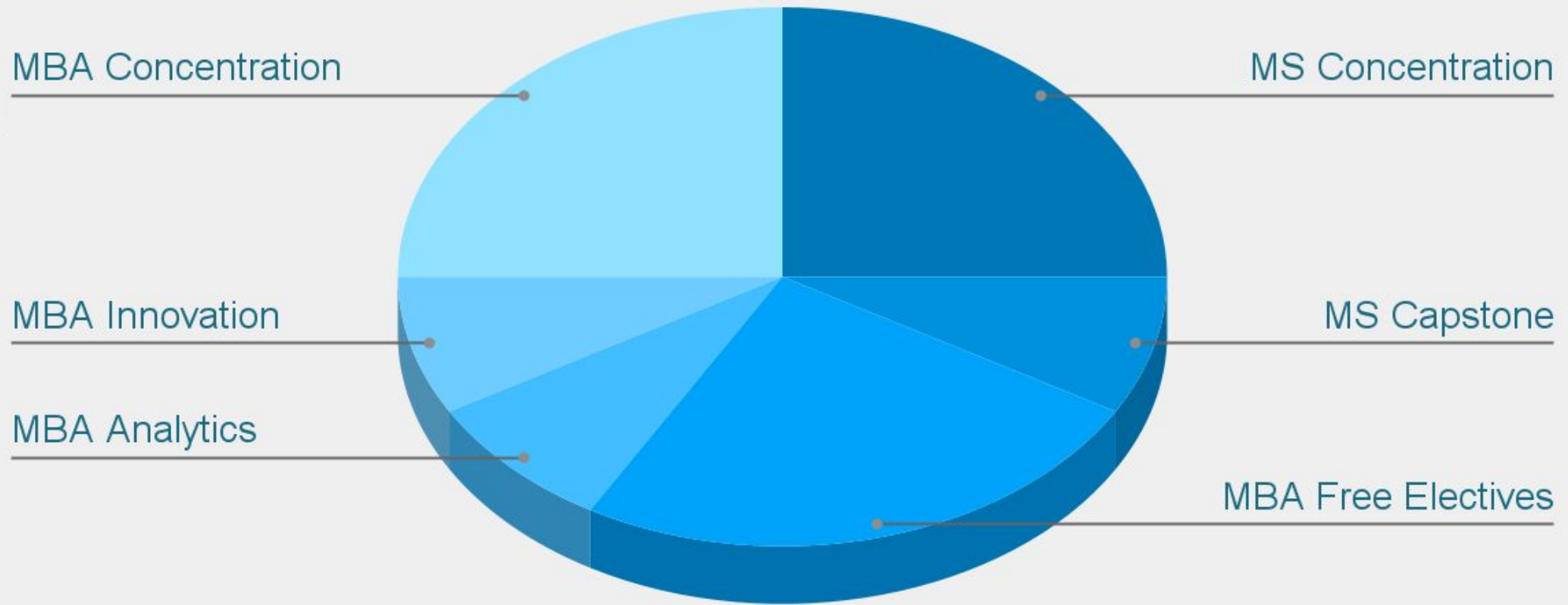


## Enterprise Concentration

Take a paid internship with a startup or  
an established technology company



# Second Year Curriculum



# Complete an Engineering Concentration



Medical Device Design



AI and Machine Learning



Software Systems



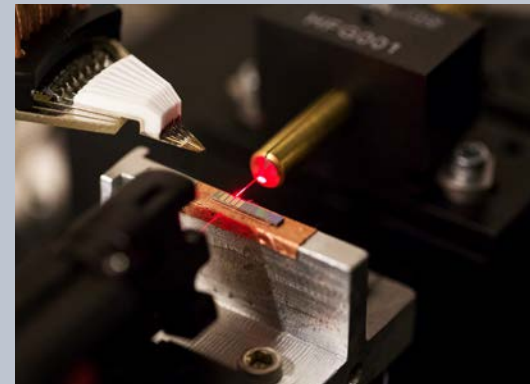
Robotics and Smart Machines



Climate, Energy, and Sustainability



Supply Chain, Retail and Service Systems



Advanced Materials and Nanotechnology





## Entrepreneurship Concentration

Classes include: Entrepreneurial Strategy; Entrepreneurial Finance; Launch Your Startup; Entrepreneurial Law for Startups; Starting and Running an Entrepreneurial Company, ...

# Fulfill a Business Concentration



## Enterprise Concentration

Classes include: Product Management; Technology Strategy; Operations Strategy; Economics of Organizational Strategy; Financial Planning and Analysis; Managerial Decision-Making, ...





# Unmatched opportunities



# Opportunities in New York City

Gain access to one of  
the most vibrant,  
expansive, and  
innovative business and  
entrepreneurial  
ecosystems in the world



# Distinguished

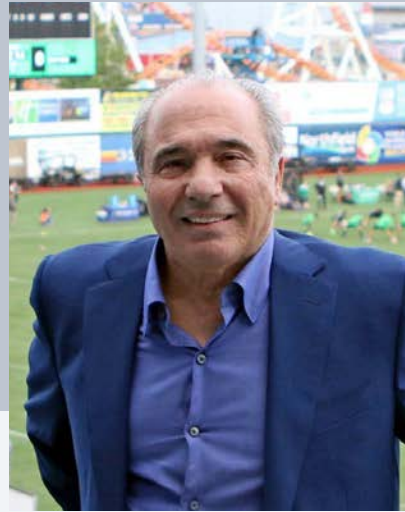
## Speakers and Conferences



**Robert Smith**  
CEO of Vista Equity  
MBA '94



**Arianna Huffington**  
Co-founder of  
The Huffington Post,  
the founder and CEO of  
Thrive Global



**Rocco Commisso**  
Chairman and CEO of  
Mediacom  
BS '71, MBA '75



**Sunita Williams**  
American Astronaut and  
United States Navy Officer



**Asahi Pompey**  
Partner, Global Head of  
Corporate Engagement,  
Goldman Sachs



# World-Class Resources

- Graduate Career Placement Team
- One-on-One Career Coaching
- Global Alumni Connections
- Innovative Professional Development Opportunities
- Student-Employer Engagements
- Professional Development and Leadership Fellows Program
- Career Management Center
- CMC Coaches / CMC Fellows
- Executives in Residence
- Columbia Build Lab
- Columbia Startup Lab
- Alumni Edge Program
- Columbia Alumni Virtual Accelerator



# Successful Entrepreneurs





# Recruitment by Top Employers



# Worldwide alumni network

49,000+

Columbia Business School Alumni

43,000+

Columbia Engineering Alumni

92,000+

Alumni Worldwide





**Ursula Burns**  
MS '81  
Former CEO of Xerox



**Bob Bakish**  
BS '85, MBA '89  
President and CEO of  
Paramount Global

# Notable Alumni



**Cyrus Massoumi**  
MBA '03  
Founder of Zocdoc



**Alicia Abella**  
PhD, Computer Science '95  
Managing Director, Google Cloud



**Jon Stein**  
MBA '09  
Founder and CEO of Betterment



**Ethan Brown**  
MBA '08  
Founder, president and  
CEO of Beyond Meat



# Next steps



# What We Look For

## Personal Characteristics

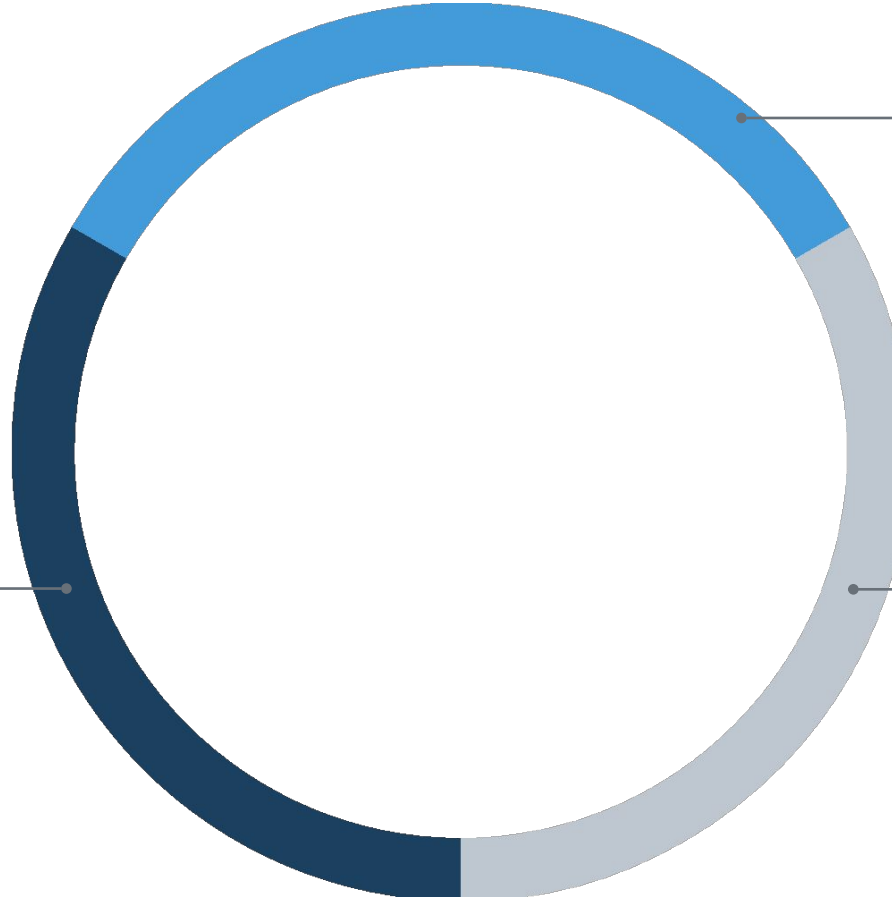
- Recommendations
- Essays
- Interview

## Academic History

- Undergraduate STEM degree
- Work experience (min. 2 yrs.)
- GMAT / GRE scores

## Alignment with Your Professional Goals

- Interested in creating or joining a startup company
- Seeking an enhanced role at an established technology firm
- Expanding opportunities as a technical product manager



# Application Deadlines

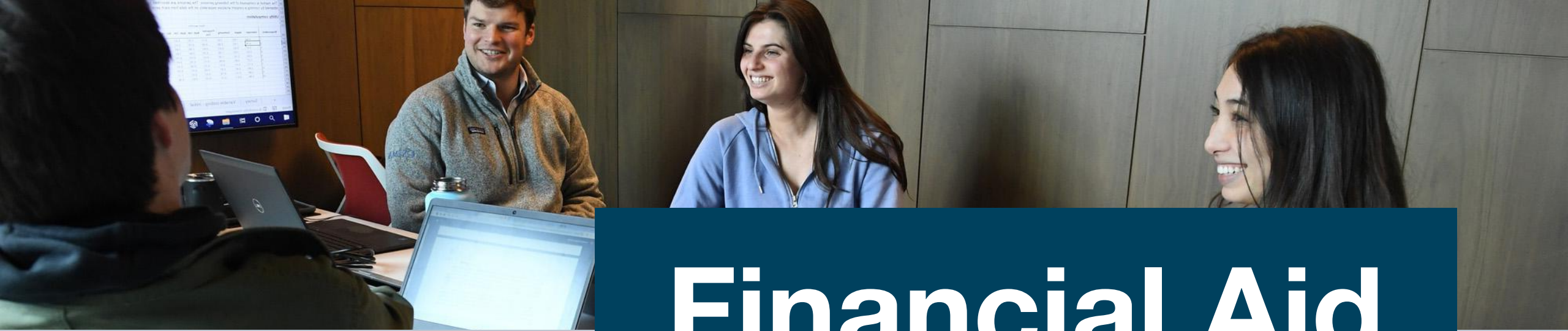
	Application Due	Decision
Round 1	September 28, 2022*	Final decision expected by December 15, 2022
Round 2	January 11, 2023*  <i>*Applications are due by 11:59pm EST on the deadline.</i>	Final decision expected by April 1, 2023



# Application Requirements

- Online Application
- Résumé
- 2 Essays
- 2 Letters of Recommendation
- Transcripts
- GRE or GMAT Scores
- Interviews by Invitation
- Application Fee





# Financial Aid

## Merit-Based Fellowship

- Range from \$20K to full tuition per year; renewable and can be combined with need-based scholarship with restrictions
- Awarded after admissions decisions
- Apply for admission by January 15, 2023; No separate application needed

## Need-Based Scholarship

- Multi-step application process after admission
- Range from \$10K–\$30K per year; renewable

## U.S. / International Student Loans

- Loans available up to the full financial aid budget less other aid
- No-cosigner international loan options available for up to 80% of the cost of attendance



# Q&A



# Contact Us

[apply@gsb.columbia.edu](mailto:apply@gsb.columbia.edu)

212-854-1961

---

# Follow Us

 @ColumbiaMBA

 @Columbia\_biz

 /school/columbia-business-school

 @Cugradseas

 @CUGradSEAS

 @Columbia SEAS Grad Admissions Office





A modern office lounge area with a long orange modular sofa, several small white round tables, and a row of yellow cylindrical stools with blue metal frames. A person in a blue shirt and dark pants is walking quickly across the orange carpeted floor, creating a motion blur effect. To the left, there is a staircase with a wooden railing and a glass balustrade. Large windows on the right side offer a view of a cityscape. The text "Thank you" is overlaid in the center in a large, white, sans-serif font.

**Thank you**



COLUMBIA  
ENGINEERING



The master of science program is strongly oriented to collaborative research and a well-balanced program of study.

Your work will result in a broad grounding in your selected concentration, along with in-depth knowledge in your specific area of specialization.

## APPENDIX

# Engineering Concentration Courses

### Medical Device Design

*9 Credits*

- Biomedical Innovation I
- Lab to Market
- Bioinstrumentation
- Drug and Gene Delivery
- Biomems

### Advanced Materials and Nanotechnology

*9 Credits*

- Nanotechnology
- Infrastructure Materials
- Microelectromechanical Systems
- Principles of Device Microfabrication
- Synthesis & Processing of Materials
- Ceramic Nanomaterials
- Electronic and Magnetic Properties of Solids
- Materials Science Laboratory
- Mechanical Properties of Structural Materials
- Ceramics & Composites
- Electrochemical Materials and Devices
- Thin Films and Layers
- Mechanics of Fracture and Fatigue
- Micromechanics of Composite Materials
- Fundamentals of photonics

### AI and Machine Learning

*9 Credits*

- Machine Learning
- Natural Language Programming
- Machine Learning for Functional Genomics
- Artificial Intelligence
- Unsupervised Machine Learning
- Machine Learning Theory

### Climate, Energy, and Sustainability

*9 Credits*

- Energy: Sources and Conversation
- Alternative Energy Resources
- Introduction to Atmospheric Science
- Electrochemical Energy Storage Systems
- Solar Fuels

### Robotics and Smart Machines

*9 Credits*

- Robotics
- Computational Aspects of Robotics
- Robot Learning
- Robotics Studio
- Machine Learning
- Computer Vision
- Advanced Kinematics, Dynamics, and Control in Robotics

### Software Systems

*9 Credits*

- Introduction to Databases
- Computer Networks
- Fundamentals of Large-scale Distributed Systems
- Computer Security 1
- Computer Security 2
- Database System Implementation

### Supply Chain, Retail and Service Systems

*9 Credits*

- Supply Chain Analytics
- Transportation Analytics and Logistics
- Dynamic Pricing and Revenue Management
- Service Engineering
- Healthcare Operations Management
- OR in Public Policy

Students who choose the entrepreneurship concentration will be given a summer stipend to assist them while they pursue their venture idea.

Students who pursue the enterprise concentration will obtain an internship with support from both the Engineering and Business School's Career Offices.

## APPENDIX

# Business Concentration Courses

### Entrepreneurship Concentration *9 Credits*

- Entrepreneurial Strategy
- Entrepreneurial Selling
- Entrepreneurial Law for Start-Ups
- Entrepreneurial Greenhouse
- Entrepreneurial Finance
- Foundations of Venture Capital
- Launch Your Startup
- Starting and Running an Entrepreneurial Company

### *Analytics Requirement* *3 Credits*

- Analytics in Action
- The Analytics Advantage
- Business Analytics II
- Marketing Analytics
- Demand and Supply Analytics
- People Analytics and Strategy
- Market Intelligence: Art & the Science
- Quantitative Pricing & Revenue Analytics
- Data Science for Marketing Managers
- Modern Econometrics for Business

### Enterprise Concentration *9 Credits*

- Product Management
- Technology Strategy
- Operations Strategy
- Economics of Strategic Behavior
- Economics of Organizational Strategy
- Financial Planning and Analysis
- Top Management Process
- Managerial Decision-making
- Power and Influence

### *Innovation Requirement* *3 Credits*

- Foundations of Innovation
- Think Bigger
- Napoleon's Glance
- The Corporate Innovator
- Innovate Using Design Thinking



# Columbia Engineering Elective Courses

- Advanced Kinematics, Dynamics, and Control in Robotics
- Alternative Energy Resources
- Artificial Intelligence
- Bioinstrumentation
- Ceramic Nanomaterials
- Ceramics & Composites
- Computational Aspects of Robotics
- Computer Vision
- Database System Implementation
- Drug and Gene Delivery
- Dynamic Pricing and Revenue Management
- Electrochemical Energy Storage Systems
- Electrochemical Materials and Devices
- Electronic and Magnetic Properties of Solids
- Energy: Sources and Conversation
- Fundamentals of Large-scale Distributed Systems
- Fundamentals of Photonics
- Healthcare Operations Management
- Infrastructure Materials
- Introduction to Atmospheric Science
- Introduction to Databases
- Lab to Market
- Machine Learning for Functional Genomics
- Machine Learning Theory
- Materials Science Laboratory
- Mechanical Properties of Structural Materials
- Micromechanics of Composite Materials
- Nanotechnology
- Natural Language Programming
- OR in Public Policy
- Principles of Device Microfabrication
- Robot Learning
- Robotics
- Service Engineering
- Solar Fuels
- Solar Thermal Engineering
- Supply Chain Analytics
- Synthesis & Processing of Materials
- Thin Films and Layers
- Transportation Analytics and Logistics

# Columbia Business School

## Elective Courses

- Analytics in Action
- Applying Healthcare IT and Digital Health
- Business Analytics II
- Customer Management Concepts and Models
- Data Science for Marketing Managers
- Demand and Supply Analytics
- Digital Marketing
- Economics of Strategic Behavior
- Entrepreneurial Greenhouse
- Entrepreneurial Law for Start-Ups
- Entrepreneurial Strategy
- Executive Ethics
- Financial Planning and Analysis
- Foundations of Innovation
- Foundations of Venture Capital
- Innovate Using Design Thinking
- Intro to Databases for Business Analytics
- Investing in Medical Technologies
- Launch Your Startup
- Lean Launchpad
- Managerial Decision-making
- Managerial Negotiations
- Market Intelligence: The Art and the Science
- Marketing Analytics
- Modern Econometrics for Business
- Natural Language Processing
- Operations Strategy
- People Analytics and Strategy
- Quantitative Finance: Models and Computation
- So, You Want to Be a Product Manager
- Strategic Consumer Insights
- Strategy and Competition in Pharma and Biotechnology
- Technology Strategy
- The Analytics Advantage
- The Business Of Climate Change: Investing and Managing In A Changing Environment
- The Leader's Voice
- The New AI: The Business and Marketing of Aesthetics
- The U.S. Healthcare System: Structure and Strategies
- Think Bigger
- Virtual Reality and Artificial Intelligence
- Web App Programming in Python