

# Engineering Business, Graduate Certificate

The Graduate Certificate in Engineering Business is part of the Galante Engineering Business Program. The Galante Engineering Business Program offers a progressive opportunity for engineering students to complement their technical engineering education with business skills. Galante is founded on the values of student engagement and leadership to strengthen interpersonal and professional skills.

The certificate seeks to provide students opportunities to apply the technical aspects of an engineering skill foundation in corporate settings through both academic and programmatic elements. Programmatic elements include workshops, speaker series, site visits, seminars, and other related personal and professional development activities as a connected cohort. These activities equip students to manage projects, lead people, make data-driven and market-based decisions, and advance economically sound initiatives.

The Galante Engineering Business Program can be completed concurrently with the following degree programs:

- MSBioE Bioengineering with Concentration in Biomedical Devices and Bioimaging (<https://catalog.northeastern.edu/graduate/engineering/bioengineering/bioengineering-msbioe/#text>)
- MSChE Chemical Engineering (<https://catalog.northeastern.edu/graduate/engineering/chemical/master-of-science-chemical-engineering-msche/>)
- MSCivE Civil Engineering with Concentration in Construction Management (<https://catalog.northeastern.edu/graduate/engineering/civil-environmental/civil-engineering-concentration-construction-management-mscive/>)
- MS Data Analytics Engineering (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/data-analytics-engineering-ms/>)
- MSECE Electrical and Computer Engineering with Concentration in Computer Vision, Machine Learning, and Algorithms
- MSECE Electrical and Computer Engineering with Concentration in Hardware and Software for Machine Intelligence (<https://catalog.northeastern.edu/graduate/engineering/electrical-computer/electrical-computer-engineering-concentration-hardware-software-machine-intelligence-msece/>)
- MSEM Engineering Management (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/engineering-management-msem/>)
- MS Human Factors (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/human-factors-mshf/>)
- MSIE Industrial Engineering (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/industrial-engineering-msie/>)
- MSME Mechanical Engineering with Concentration in Mechatronics (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/mechanical-engineering-concentration-mechatronics-msme/>)
- MSOR Operations Research (<https://catalog.northeastern.edu/graduate/engineering/mechanical-industrial/operations-research-msor/>)

The Graduate Certificate in Engineering Business requires 15 semester hours from four courses across three categories. Students should consult with a COE advisor whether any courses completed for this certificate may also fulfill requirements of the student's concurrent master's program.

Refer to the Galante Engineering Business Program webpage (<https://galante.sites.northeastern.edu/>) for additional details and description.

## Program Requirements

- Concentrations and course offerings may vary by campus and/or by program modality. Please consult with your advisor or admissions coach for the course availability each term at your campus or within your program modality.
- Certain options within the program may be *required* at certain campuses or for certain program modalities. Please consult with your advisor or admissions coach for requirements at your campus or for your program modality.

Complete all courses and requirements listed below unless otherwise indicated.

## Core Requirements

Code	Title	Hours
Complete four courses from at least three of the following categories. Students can only take one course outside the College of Engineering.		
<b>Business Innovation Development</b>		
BIOE 5510	Bioengineering Products/Technology Commercialization	
BIOE 5810	Design of Biomedical Instrumentation	
BIOE 5820	Biomaterials	
ENTR 6212	Business Planning for New Ventures	
ENTR 6218	Business Model Design and Innovation	
ENTR 6241	Entrepreneurial Marketing and Selling	

## 2 Engineering Business, Graduate Certificate

ENTR 6300	Managing a Technology-Based Business
ENTR 6340	The Technical Entrepreneur as Leader
GE 5010	Customer-Driven Technical Innovation for Engineers
GE 5020	Engineering Product Design Methodology
GE 5030	Iterative Product Prototyping for Engineers
GE 5100	Product Development for Engineers
INNO 6200	Enterprise Growth and Innovation
<b>Organizational Excellence</b>	
BIOE 5250	Regulatory and Quality Aspects of Medical Device Design
EMGT 5300	Engineering/Organizational Psychology
EMGT 6600	Engineering Team Performance
ENTR 6250	Lean Design and Development
IE 5617	Lean Concepts and Applications
SCHM 6201	Operations and Supply Chain Management
SCHM 6223	Managing Healthcare Supply Chain Operations
PHIL 5010	AI Ethics
<b>Financial Analysis</b>	
ACCT 6200	Financial Reporting and Managerial Decision Making 1
EMGT 5220	Engineering Project Management
EMGT 6225	Economic Decision Making
EMGT 6305	Financial Management for Engineers
ENTR 6219	Financing Ventures from Early Stage to Exit
<b>Information and Business Analysis</b>	
IE 7300	Statistical Learning for Engineering
or BIOE 5860	Engineering Approaches to Precision Medicine I
or BIOE 5880	Computational Methods in Systems Bioengineering
or CS 6140	Machine Learning
or CS 6220	Data Mining Techniques
or DA 5030	Introduction to Data Mining/Machine Learning
or EECE 5644	Introduction to Machine Learning and Pattern Recognition
DAMG 6210	Data Management and Database Design
or IE 6700	Data Management for Analytics
DAMG 7290	Data Warehousing and Business Intelligence
DS 5110	Introduction to Data Management and Processing
IE 5640	Data Mining for Engineering Applications
or IE 7275	Data Mining in Engineering
or CS 6220	Data Mining Techniques
IE 6600	Computation and Visualization for Analytics
or EECE 5642	Data Visualization
INFO 6215	Business Analysis and Information Engineering

### Program Credit/GPA Requirements

15 total semester hours required

Minimum 3.000 GPA required