

# Digital Platforms for Service Innovation, Graduate Certificate (Boston)

Digital platforms for providing services are online tools that connect customers with service providers smoothly, enhancing operations by simplifying communication, transactions, and delivery. Examples of digital platforms for service delivery include Uber and Airbnb. The increasing digitization of the economy and resulting growth of digital platforms have dramatically altered how individuals, organizations, and governments exchange and allocate resources. These platforms have disrupted multiple industries; upended labor economics and practices; and fundamentally transformed resource management, asset allocation, and market design. This certificate is designed to provide students with foundational knowledge about the ecosystems around digital platforms and their impact on the equitable distribution of economic opportunities in society.

The transdisciplinary training in this certificate provides students with the capacity to integrate applicable findings and theories in business, policy, and social science with ethical engineering design and practice and, conversely, the ability to succeed in emerging and dynamic work environments that are yet to be regulated and to understand how technological innovations create value for different stakeholders and impact society at large. The certificate is designed for learners who view the digital sharing economy and sociotechnical systems to be central to their future careers.

## Curriculum

Differentiated tracks have been created for students coming from social sciences and business backgrounds and students coming from engineering and computer science backgrounds. The certificate requirements consist of a cross-disciplinary training course; an interdisciplinary common core course; and one elective from the following areas: modeling and algorithms, economic and policy analysis, product management, and platform-based business model innovations.

## Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Code	Title	Hours
<b>Course 1</b>		
Complete a cross-disciplinary training course from the appropriate course 1 option list.		3–4
This requirement offers cross-disciplinary training in one of two areas: in social sciences or business for learners with a background in engineering or computer science and in knowledge engineering for learners with a background in the social sciences or business. Students should complete one of the courses listed below or submit a petition to their advisor for a different course that they believe is suitable. Some options to meet this course 1 requirement are prerequisites of options to meet the course 3 requirement of this program. Students are encouraged to examine course 3 options when planning their course 1 selection.		
<i>Course 1 for Learners with Background in Engineering or Computer Science</i>		
PHIL 5005	Information Ethics	
PHIL 5010	AI Ethics	
PPUA 5262	Big Data for Cities	
PPUA 6502	Economic Analysis for Policy and Planning	
<i>Course 1 for Learners with Background in the Social Sciences or Business</i>		
CS 5800	Algorithms	
IE 6400	Foundations for Data Analytics Engineering	
<b>Course 2</b>		
ENGR 6010	Fundamentals of the Platform Economy	4
<b>Course 3</b>		
Complete an elective from one of the following elective lists. Students should choose one of the courses listed below or submit a petition for a different course they believe is suitable. Some options to complete this requirement have prerequisites outside the curriculum for this certificate program.		3–4
<i>Modeling and Algorithms Electives</i>		
CIVE 7100	Time Series and Geospatial Data Sciences	
CIVE 7380	Performance Models and Simulation of Transportation Networks	
CIVE 7381	Transportation Demand Forecasting and Model Estimation	
CS 5340	Computer/Human Interaction	
CS 5800	Algorithms	
ECON 5140	Applied Econometrics	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 7398	Advanced Special Topics in Electrical and Computer Engineering	
IE 6200	Engineering Probability and Statistics	

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IE 7215	Simulation Analysis
IE 7275	Data Mining in Engineering
OR 6205	Deterministic Operations Research
PPUA 5261	Dynamic Modeling for Environmental Decision Making
<i>Urban Affairs Electives</i>	
CIVE 5373	Transportation Systems: Analysis and Planning
CIVE 6566	Sustainable Urban Transportation: Netherlands
CIVE 7385	Public Transportation
PPUA 5262	Big Data for Cities
PPUA 5263	Geographic Information Systems for Urban and Regional Policy
PPUA 5265	Global Urbanization and Planning
PPUA 5266	Urban Theory and Science
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context
PPUA 7237	Advanced Spatial Analysis of Urban Systems
<i>Policy and Regulation Electives</i>	
ENSY 5000	Fundamentals of Energy System Integration
PPUA 5260	Ecological Economics
PPUA 5264	Energy Democracy and Climate Justice: Technology, Policy, and Social Change
PPUA 6500	Principles of Public Administration
PPUA 6502	Economic Analysis for Policy and Planning
PPUA 6506	Techniques of Policy Analysis
<i>Energy and Environment Electives</i>	
CIVE 5363	Climate Science, Engineering Adaptation, and Policy
CIVE 5699	Special Topics in Civil Engineering
<i>Product Management and Platform-Based Business Model Innovations Electives</i>	
EMGT 6225	Economic Decision Making
ENTR 6218	Business Model Design and Innovation
MKTG 6200	Creating and Sustaining Customer Markets
MKTG 6214	New Product Development
MKTG 6283	Marketing and Selling Innovation

Students who complete the requirements above at less than the required 12 semester hours for this certificate should consult with their advisor regarding 1-semester-hour and/or 2-semester-hour course options to complete program requirements.

### Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required