MIT MANAGEMENT EXECUTIVE EDUCATION | MIT CSAIL

MIT SLOAN AND MIT CSAIL

ARTIFICIAL INTELLIGENCE: IMPLICATIONS FOR BUSINESS STRATEGY

ONLINE SHORT COURSE

COURSE CONTENT BREAKDOWN

Each course module is designed to ensure an engaging learning experience. You'll be exposed to a wide variety of material throughout the course.

- Quiz
- Notes
- Video
- Elearning Activity
- Web Resource
- Enrichment Activity
- Infographic
- Discussion Forum

COURSE SUMMARY

What is artificial intelligence (AI)? What does it mean for business? And how can your company take advantage of it? This online program, designed by the MIT Sloan School of Management and the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), helps you answer these questions.

Through an engaging mix of introductions to key technologies, business insights, case examples, and your own business-focused project, your learning journey brings into sharp focus the reality of central AI technologies today and how they can be harnessed to support your business needs.

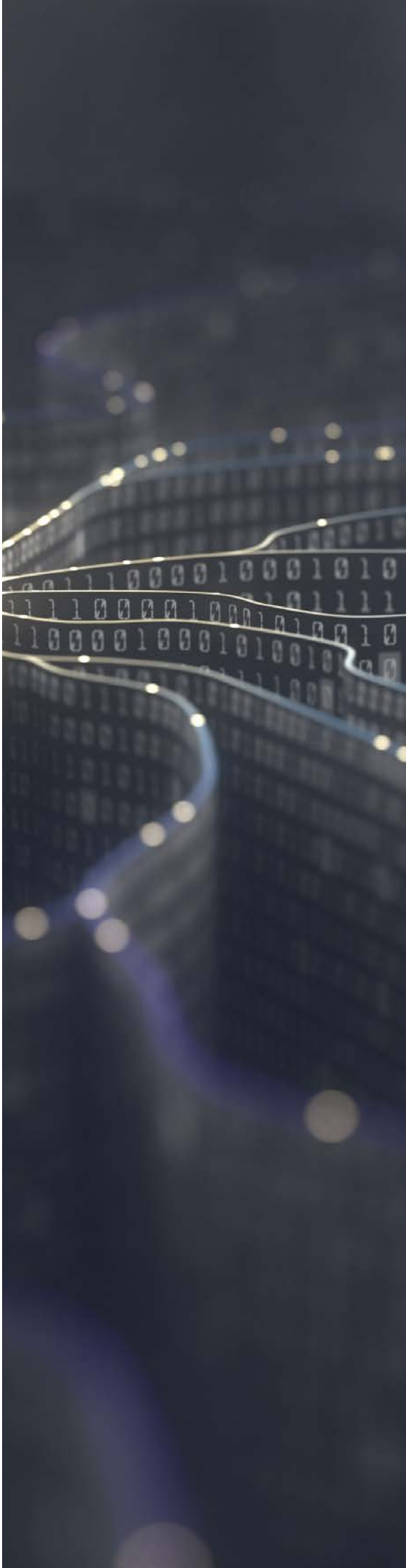
Focusing on key AI technologies, such as machine learning, natural language processing, and robotics, the course helps you understand the implications of these new technologies for business strategy, as well as the economic and societal issues they raise.

Please note that module titles and their contents are subject to change during course development.

ORIENTATION

WELCOME TO YOUR ONLINE CAMPUS

- Get to grips with your new virtual classroom
- Meet your Success Team and get to know your fellow classmates



MODULE 1

AN INTRODUCTION TO ARTIFICIAL INTELLIGENCE

This introductory module guides you through the evolution of key AI technologies and how they have developed to transform industry and business practice. The relationship between AI and Collective Intelligence, as well as the implications of this partnership for organizations and society are also covered. A framework for introducing strategy for strategic advantage is introduced. As part of an ongoing project, you will begin to consider your own organization in terms of the deployment of AI technologies.

- Recognize how this program could help you to create a more intelligent organization
- Define AI and differentiate between narrow and general AI
- Outline the history of AI from both a technical and social perspective
- Articulate how computers and people can be combined to foster collective intelligence
- Apply a framework for realizing strategic advantage in business
- Analyze an organization's use of technologies in support of its strategy

MODULE 2

MACHINE LEARNING IN BUSINESS

In this module, you'll explore the core concepts of machine learning, an AI technology that aims to design, understand, and use computer programs that learn from experience. Discover how machine learning can be successfully integrated into business functions through rich case studies and faculty-led videos that examine the opportunities that machine learning affords through sensing and predicting. For your ongoing project, you'll propose ideas for the application of machine learning in a business context of your choice.

- Review the core features of machine learning as a transformative technology
- Illustrate how machine learning is currently deployed in various industries and across functions
- Investigate how an organization can use machine learning to achieve cost leadership, differentiation, or focus
- Decide if an application of machine learning is appropriate in an organization
- Evaluate the strategic, technical, and other aspects of an application of machine learning

MODULE 3

NATURAL LANGUAGE PROCESSING IN BUSINESS

Module 3 is devoted to natural language processing (NLP), an AI technology developed to intelligently process human language. Through rich case studies and faculty-led videos, which explore natural language understanding, natural language generation, and conversing in natural language, you'll learn how NLP can be skilfully deployed in a series of business contexts to achieve strategic advantage. For the next part of your ongoing project, the focus shifts to NLP and its strategic implementation in a business context of your choice.

- Review the core features of natural language processing as a transformative technology
- Illustrate how natural language processing is currently deployed in various industries and across functions
- Investigate how an organization can use natural language processing to achieve cost leadership, differentiation, or focus
- Decide if an application of natural language processing is appropriate in an organization
- Evaluate the strategic, technical, and other aspects of an application of natural language processing

MODULE 4

ROBOTICS IN BUSINESS

This module delves into the key elements of robotics as a transformative AI technology, with a focus on robots used in factories, warehouses, and for miscellaneous physical services. Through rich case studies and faculty-led videos surveying robots and autonomous vehicles, you will learn how robotics can benefit an organization. You'll have the opportunity, once more, to submit ideas regarding the potential for robotics to be deployed in a business context of your choice.

- Review the core features of robotics as a transformative technology
- Illustrate how robots are currently deployed in various industries and across functions
- Investigate how an organization can use robotics to achieve cost leadership, differentiation, or focus
- Decide if an application of robotics is appropriate in an organization
- Evaluate the strategic, technical, and other aspects of an application of robotics

MEET YOUR FACULTY DIRECTOR

THOMAS MALONE
(MIT SLOAN)

Thomas W. Malone is a Professor of Information Technology and of Organizational Studies at the MIT Sloan School of Management, and his research focuses on how new organizations can be designed to take advantage of the possibilities provided by information technology.

He has published his groundbreaking research in the book *The Future of Work* and in over 100 articles, research papers, and book chapters. He holds 11 patents, cofounded three software companies, and is quoted in numerous publications such as *Fortune*, *The New York Times*, and *Wired*.

Malone holds a BA from Rice University, two master's degrees and a PhD from Stanford University, as well as degrees in applied mathematics, engineering-economic systems, and psychology.

MODULE 5

ARTIFICIAL INTELLIGENCE IN BUSINESS AND SOCIETY

In Module 5, you'll explore other types of AI before examining the human-machine relationship, and considering the impact of AI on jobs, skills, and talent. The ethical and social implications that arise through AI integration in the workplace will also be examined. You'll be tasked with anticipating and planning for the risks and considerations that may apply to integrating AI in a business context of your choice.

- Extend your knowledge of AI technologies to other types of AI
- Articulate the broader implications of AI for business and society
- Analyze the impact of AI on the future of work
- Debate the ethical concerns entailed within the adoption of AI
- Assess the risks and benefits of the human-machine partnership

MODULE 6

THE FUTURE OF ARTIFICIAL INTELLIGENCE

This module allows you to imagine the future of AI and realize the importance and urgency of its adoption into your organization. Using what you have learnt from the previous modules, you will create a business roadmap for the strategic implementation of AI and Collective Intelligence into an organization of your choice.

- Predict the rate of future progress of AI
- Articulate how people can connect to create more intelligent organizations
- Propose an initiative for a specific business application of AI
- Produce a roadmap for a business to gain strategic advantage through the use of AI
- Reflect on the key outcomes of this program

EARN A CERTIFICATE OF COMPLETION FROM THE MIT SLOAN SCHOOL OF MANAGEMENT

I'M READY TO REGISTER

MEET YOUR FACULTY DIRECTOR

DANIELA RUS
(MIT CSAIL)

Daniela Rus is a Professor of Electrical Engineering and Computer Science and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT, where her research interests include distributed robotics, mobile computing, and programmable matter.

Her research group, the Distributed Robotics Lab, has developed modular and self-reconfiguring robots, systems of self-organizing robots, networks of robots and sensors for first-responders, mobile sensor networks, techniques for cooperative underwater robotics, and new technology for desktop robotics.